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ABSTRACT

The volume, developed for use in graduate level courses in vocational education, contains 12 papers written by the author in 1973 and 1974. The papers are grouped into four categories: (1) curriculum concerns, containing papers on design of programs, the use of follow-up studies for increasing curriculum relevancy, and increased relevance through curriculum revision for math based postsecondary vocational programs, (2) professional associations, containing papers on views on vocational guidance from an American Vocational Association (AVA) vice-president, a word about the AVA on the national scene, and the role of the State vocational association and the profession of vocational education, (3) vocational teacher education, containing papers on the mission of the department of vocational education with respect to graduate studies and research in the future and the future of vocational teacher education in the universities, and (4) some general considerations, containing papers on employing the chronically unemployed, professional women in vocational education, preparing people for occupations, and vocational education for the 1980's. (JR)

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THE PENNSYLVANIA STATE UNIVERSITY
DEPARTMENT OF VOCATIONAL EDUCATION

FUGITIVE ESSAYS AND OTHER PAPERS: 1973-74

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Angelo C. Gilli, Sr.

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FUGITIVE ESSAYS AND OTHER PAPERS: 1973-74

Angelo C. Gilli, Sr.
Professor of Vocational and Higher Education

January, 1975

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PREFACE

This monograph contains twelve unpublished papers written by the author during the years 1973 and 1974. They fall within four general categories, namely: curriculum concerns, professional associations, vocational teacher education, and some general considerations. A majority of the papers were presented at conference and seminar groups in Pennsylvania or at national conferences. Several of them, however, are extractions of selected classroom presentations.

Each of these papers have been used on several occasions by the author in teaching graduate courses in vocational education.

The author felt that it would be most convenient to place these selected papers into a monograph, thereby facilitating their availability to vocational education department students and other interested vocational educators. With this in mind, it was decided to develop this monograph as an instructional aid for graduate courses in the Department of Vocational Education.

Angelo C. Gilli, Sr.

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A. Curriculum Concerns

1. DESIGN OF PROGRAMS*

Since new programs are frequently initiated at the local level in two-year colleges, a discussion of some general steps for designing new programs is in order. The pattern of two-year college control varies from state to state, which makes it difficult to specify a simple step-by-step procedure for initiating new programs that could fit all situations. However, the overall procedure for assessing the need for new programs presented in another publication by this author (Gillie, 1973) are sufficiently general to be applicable in most places. Even in the case of independent two-year colleges, as the trend toward injecting public funds into private colleges gathers momentum, their control characteristics will become more like the public two-year colleges. In most public two-year colleges, there is a pattern of decision making relative to new programs that operate at three levels. The first or "grass roots" level is the local group (frequently an ad hoc committee consisting of lay citizens, faculty, and administrators) that proposes to the local governing board of the college that the new program be offered or not offered. Using these recommendations as a basis, the local Board of Trustees (which is the second level in the decision making structure), accepts or rejects the advice of this group. Should the Board decide to go with the new program, they in turn make provisions for it in their state level budget requests (which is the third level in the decision making structure). State level control is indirect in some states (a matter of approving the requested budget increase which provides for the new program) or control may be made more direct (where

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*Presented at the A.T.E.A. Regional Conference on October 13, 1973, at Lehigh Community College.

a state level board makes the final decision as to whether or not the new porgram can be offered). Therefore, although the finer elements within each level of decision making can vary, the overall pattern is similar in many states.

Designing a new program is a task assigned to professional personnel associated with the two-year college for which the request was made. Although much can be said in favor of designing programs at the local level, such an approach is also fraught with hazards. These dangers include: (a) calling upon persons with inadequate preparations to design the new curriculum; (b) designing a provincial curriculum that is so unique that no business-industrial concern outside that locale is attracted to the graduates; (c) excessive concern with the academic syndrome (always a danger with a program committee which has a preponderance of non-vocational educators on it) can result in a program which requires a pre-engineering or pre-medical type student to get through the academic mandated courses; (d) proposing studies within the curriculum that are not relevant to the overall occupational area; (e) creation of serious imbalances between the three major components of an occupational curriculum (the vocational, support, and general education courses); (f) selecting verbiage in describing courses and the program that inaccurately portrays the curriculum and its objectives. The sequence suggested for designing new programs include ways to: determine subject content; decide whether the program should be broadly or narrowly based; determine the most appropriate cognitive level of the courses; achieve optimum balance of specialty, general education and support courses; effectively utilize a college-wide curriculum committee;

inaugurate evaluation provisions, including a bi-annual program review; establish liason between potential employers and the college; and recruit students.

Determination of Behavioral Objectives

The subject content areas to be included in a new occupational program should relate directly to program objectives, which in turn should directly deal with student oriented outcomes. New curriculum objectives must be in agreement with two general goals of the two-year college; first, to serve as a vehicle for middle level occupational preparation for all those who can benefit from and who want it; secondly, the open-door concept should be implemented in a program admission mechanism that provides a reasonable and realistic approach to selection and rejection of applicants. Rejecting some applicants for a program, when viewed superficially, appears to be in contradiction with the egalitarian admissions goal of the college, but is actually in sound agreement with it. Admission into occupational programs, whether they be well established or newly designed ones, should be based on careful study of the individuals' abilities and interests. A judicial blending of these components with the requirements for successful completion of curriculum and the characteristics of the jobs the student might enter upon graduation is also an integral part of the admissions strategy. Selecting students for programs in this way, actually enhances their chances for successful completion of the curriculum and eased entry into occupations that match their capabilities and interests.

Furthermore, there should be no serious attempt to select subject matter until the objectives of the new curriculum are clearly established

and agreed upon by those responsible (the governing board and the college administration). Once agreed upon, they are to be in behavioral terms if they are to be the guiding force behind developing the curriculum. But this is no small matter. There is a substantial amount of literature relative to the business of building behavioral objectives. Much of the exhortations that emanates from these stress the essentialness of stating objectives in ways that can be measured (Maeger, 1962; Moss, 1968; Lessinger, 1970; and others), but they merely point the way and fail to provide sufficient concrete examples for the faculty member who is unfamiliar with such efforts. Perhaps, the provisions of an in-service training workshop for the appropriate faculty is the most direct way of getting them to develop behavioral type objectives. Such endeavors can be quite effective when conducted by an educator who is a specialist in the specific occupational area to be dealt with in the curriculum and has previous experience in drawing up behavioral objectives (Gillie, 1970). When this is not feasible, a satisfactory alternative (which leads up to the same result) is to provide special training in drawing up behavioral objectives for one of the specialty faculty members of the future curriculum. This training may be given in a university. Using this as a basis, with special assistance, that person can learn to develop behavioral objectives in the specific occupational area. After being trained in this way, he would return to teach his fellow faculty members how to do the same. In a workshop type setting, they would together proceed to draw up a behavioral objective for the new program.

Determination of Subject Matter Content

Identification of subject content before development of the behavioral objectives is a serious error and could usurp the process, since there is a tendency on the part of program designers to displace the original goals of the new curriculum with others that deal with mastery of pre-selected subject matter. It should be emphasized that the major goal of the program is to prepare people for jobs in a certain middle level occupational area and curricular subject matter should be clearly subservient to that goal at all times, and never the other way around. When this is truly the case, subject matter identification does not merit serious consideration until student outcomes in behavioral terms have been established.

The ideal approach to selection of subject matter content, after identification of the behavioral objectives, is to carefully sort out the academic skills and techniques needed to achieve them. Although many curriculum designers start out with such intentions, they often revert to the easier process of selecting courses that have been established. Once they stop building courses and begin searching for courses, the creative aspects of curriculum design is at an end, and may even degenerate into a "scissors and paste" task. When this happens, much of their thinking regresses into trying to decide how to "parley" various courses found in other places, resulting in a mere amalgam of courses. Curriculums developed in this fashion often end up with new objectives based on the courses, which deal primarily with students "getting through" the array of courses, and the original program objectives are subverted. This is an example of the means (completing courses) becoming the end (Merton, 1957).

Successfully designing a curriculum so that the subject matter is limited to those things needed for the achievement of the carefully drawn up behavioral objectives is most likely to happen when: (a) one or more faculty members competent in the occupational area also knows how to develop behavioral objectives; (b) a clear-cut mandate from the administration that a program designed in this fashion is the only acceptable one. Needless to say, the resulting program may end up with a number of courses that deviate from the usual and some opposition from other faculty members may be expected. Strong administrative support, coupled with obvious enthusiasm by the program designers, could very well be sufficient to gain the support of other faculty members.

In some cases, where the new program is to be offered in more than one college in a district or state, it can be designed with this larger geographic area and population group in mind. The resultant new program would be essentially the same in each of the colleges. Such an approach can also be used for colleges within that region or state that want to bring that new program into their group of offerings a year or two after its design -- in fact, they could benefit from the experiences gained by the earlier offerers of the program. It is not necessary, and sometimes wasteful, to "re-discover" a program when a very similar one is successfully functioning in another college with a similar geographic population base. In such instances, adoption of their program with some modifications to compensate for institutional differences, is certainly acceptable. The complete design of a new program is suggested when no similar program is available or when present programs of the same type appear to have serious deficiencies or flaws (sometimes it's easier to start from the beginning rather than try to patch up a poorly designed existing program).

Determination of Curriculum Orientation -- Broad or Narrow?

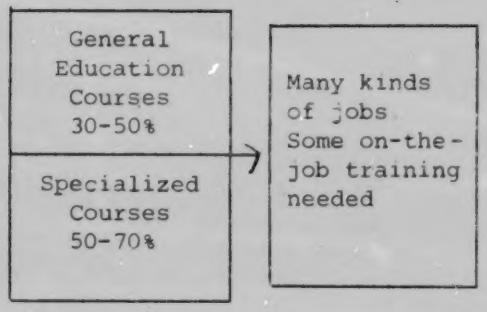
Intermeshed with the question of subject content is curriculum orientation. Should the program aim at preparing graduates for rather specific jobs or for a broad occupational area? There is a tendency for many non-occupational type educators to almost automatically opt for programs that aim at broad occupational areas since they feel it provides the students with more occupational options. This makes for attractive reading in the college catalog and brochures heralding the new program. But the question cannot be intelligently answered on that basis. Before continuing, we should describe with some detail and specificity, the characteristics of broad and narrow oriented programs.

The broad based program. In the fullest sense of the term, it is a program designed to prepare people for a large number of jobs in a broadly defined occupational area. The occupationally related courses in such curriculums emphasize the foundational aspects of the occupational area and their course contents primarily deal with cognitive type applications. Typically, these occupational courses would be limited to one-half or less of the entire curriculum (in terms of credit hours). Specific skill development is either limited to a small part of the last occupational courses in the sequence or specific skill development is omitted completely. The rationale frequently offered for designing such programs is that they increase the job-entry flexibility of the graduates. Having a sound cognitive foundation in the broad occupational area enables the graduate to more easily qualify for a larger number of jobs.

The narrow based program. Although equal in length and perhaps identical in title to its broad based counter part, the narrow based

program is very different in several ways. First of all, most or all of its courses are more directly oriented to preparation for specific job entry. Secondly, they are usually conducted at a practical level and are designed to deal directly with the potential jobs. This orientation is not limited to the occupational courses in many cases, since the general education offerings (such as communications and social sciences) are also centered around the future job. An example of this are courses such as "report writing," "technical writing," "social problems in the world of work," "development of trade unions," and so on. Examination of catalogues from colleges offering narrow based curriculums show a wide variety of these job oriented types of general education courses. A third difference is found in the laboratory courses. While they serve to examine principles and laws in broad based programs, they serve as a place to develop and practice specific skills considered necessary for specific job entry in the narrow based programs. In order to achieve this goal, a correspondingly greater amount of time is spent in a laboratory shop environment in the narrow based program.

Briefly synthesizing the similarities and the differences between the two types of program orientations, we find: (a) they are both two-year programs and both award the associate degree. There are indications that the narrow based program tends to have a lower drop-out rate (Bjorkquist, 1968). (b) The broad based version aims to occupationally educate persons for a family (cluster) of jobs within a somewhat wide occupational area. Example: A broadly prepared electronics technician would have an adequate background to become an electronics middle level worker in a number of electronics related jobs such as computer customer



Other Characteristics

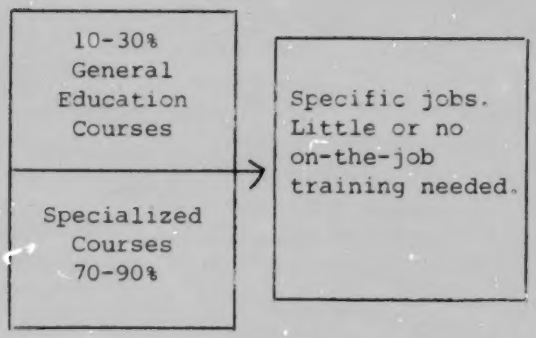
(a) Most courses (occupational and general education) conducted at a higher cognitive level.

(b) Most courses follow a more traditional "collegiate" format.

(c) Career Orientation limited to a general occupational area (not to specific jobs).

(d) Laboratory courses stress examination of principles, laws, etc.

A. BROAD BASED



Other Characteristics

(a) Most courses (occupational and general education) conducted at lower cognitive levels.

(b) Most courses are designed around job preparation and are usually untraditional (in the collegiate sense).

(c) Career orientation is heavily accented to specific job preparation.

(d) Laboratory courses stress practice in skills needed for a specific job.

B. NARROW BASED

DIAGRAMMATIC CHARACTERISTICS OF BROAD AND NARROW BASED CURRICULUMS

FIGURE 1-1

servicing, radar and microwave work, various manufacturing jobs, communications industries, and others. A narrow based program, continuing with the illustration for electronics programs, would more likely prepare people for specific jobs such as radio television servicing, electronics

maintenance in a particular industry, specific electronics equipment servicing, and others. (c) The laboratory is a place where clear cut differences between broad and narrow based programs can be seen. Longer laboratory-shop sessions, with very heavy emphasis on skill development and practice is commonplace in narrow type programs whereas in the broad based variety, these activities tend to be limited to examination and testing of basic principles and laws associated with the occupational cluster.

In the final analysis, the orientation of the program should be determined by the perceived job needs in that occupational area and the kinds of students available for entry into the program. As stated in the next section, one type of student is best fitted for broad based programs while a second kind of student is best suited for narrow based programs. Job needs in the particular occupational area should be carefully analyzed to determine whether the needs of the business-industrial community would be best served by the broad based or the narrow based type program. A blending together of the two factors, kinds of jobs within the occupational area that are available, and the kinds of students interested in those kinds of jobs, should be the major factors behind making a decision about the programs orientation.

Student Types

Although at first glance the broad based type program seems to offer maximum flexibility for the student, this may in fact be not true, particularly for those who drop out of such programs. There is some evidence that the narrow based program has a lower drop-out rate (Bjorkquist, 1968). In the final analysis though, the crux of the matter may very well lie with the placement of students whose occupational orientations are consistent with the orientation of the program.

Two-year college students can be divided on the basis of their reasons for enrolling in selected occupational programs. First, there are students who come to prepare for a specific kind of job. An example is an individual who comes to the two-year college to enroll in a dental assistant program because she intends to work in that capacity. Secondly, there are students who enter an occupational program to study those techniques, principles, and cognitive approaches that are essential to that occupational area, with little awareness of the specific work styles associated with jobs in that occupational area. Example, the student who enters an electronics curriculum because of his general interest in electronics, applications of physics and mathematics to the solution of electronic problems, and the overall cognitive style associated with this study, but has not thought about or even considered relevant the specific kind of job he would enter upon completion of the program. Cross (1968) and an unpublished study (Gillie and Impellitteri, 1972) point to the validity of a notion that these two types of students do exist in two-year colleges. For our purposes here, a former group can be called career oriented students while the latter are termed academically oriented students.

It is common knowledge that two-year colleges have higher dropout rates than other kinds of colleges. Ironically, this phenomenon is found to be equally true for the occupational programs even though their overall goal is to prepare people for entry into the world of work. The fact that the drop-out rate is so high in the occupational programs indicates a serious failure on the part of the two-year colleges in providing programs in which more students can successfully graduate and enter the work world with skills commensurate with middle level job

objectives. Placing career oriented students in narrow based programs, and academically oriented students in broad based programs, would be a direct and likely successful approach to reducing occupational program drop-out rates, since this would be matching student expectations with program orientation. Therefore, the selection of students should hinge primarily on program orientation, which in turn is determined in large part on the nature of the occupational need found by the feasibility study. For example, if it is found that electronics positions in very specific kinds of jobs with a high degree of specialization is required, then this should be given very special consideration when designing the curriculum. This in turn would suggest that career oriented students would be sought for admission into the program.

The Distribution of Courses

The kinds of courses which make up the overall occupational program can be divided into occupational, support, and general education types. When new curriculums are designed, a debate frequently insues relative to the manner in which these types of courses are proportioned in the curriculum. Faculty members tend to desire greater allocation of program time for their kinds of courses. Moderate tendencies in this direction are merely a healthy manifestation of a teacher's belief in the importance of his own specialty. But is there a more sound approach to deciding the portion of the program to be allocated for each? A better way would be to tie in with the objectives established. Program objectives, if conceived in terms of the people in the program as well as the occupations in which they are to enter, will deal with some aspects of general education as well as the support and occupational

type courses. Furthermore, the college will likely have general education goals for all of its students, which should be considered in the design of any new program.

A review of college catalogs show considerable variation in the allocation of program time to these three components, with an observable trend in terms of institutional type. Single purpose institutions, which often call themselves "technical colleges" or "technical institutes" allocate a greater proportion of the total curriculum to occupational courses and correspondingly less time to general education. This fits with the overall goals of such institutions, which emphasize occupational preparation as their primary function. At the opposite end of the spectrum are the more comprehensive public community colleges which allocate as much as 50% or more of the total two-year program credits to general education. Again, this coincides with the overall goals of those institutions, which is to prepare a somewhat broadly educated person for the world of work. There is no magic combination of the three generic course types, but it does seem reasonable to expect a sizeable part of broad based curriculums to be earmarked for general education since it is consistent with a broadened treatment of the occupational courses found in them. The narrow type program, on the other hand, tend to allocate a smaller portion of curriculum time to general education courses which are also slanted toward the world of work, since this is consistent with their goals.

The Role of the Laboratory-Shop Experiences

It has been generally conceded that a two-year college occupational program cannot be completely cognitive and theoretical. One of the more obvious distinctions of the occupational curriculums from the academic

oriented programs is the substantial portion of the program set aside for learning how to perform certain tasks that are related to that occupational area. There is considerable variation in the amount of time earmarked for these activities and also in the kinds of things they do within various kinds of occupational programs. As indicated earlier, the narrow based programs usually have more hours per week allocated to the development and practice of job-related skills and the laboratory activities are more directly aimed at specific jobs.

The laboratory-shop activities in the board based type programs tend to have a different focus. They are often concerned with examining, testing, and proving the cognitive principles of the occupational area. While performing in this manner, these students may have little or no idea of the specific jobs they will eventually enter upon completion of the program. Actually, the laboratory-shop activities are often designed such that concern for specific jobs would not be relevant to the task at hand. There are some broad based programs in which some skill development and practice is permitted in the last one or two occupational courses. Even when this occurs, the skill development and practices are of a broad nature and deal with a job type and not a specific job.

Evaluation of New Occupational Programs

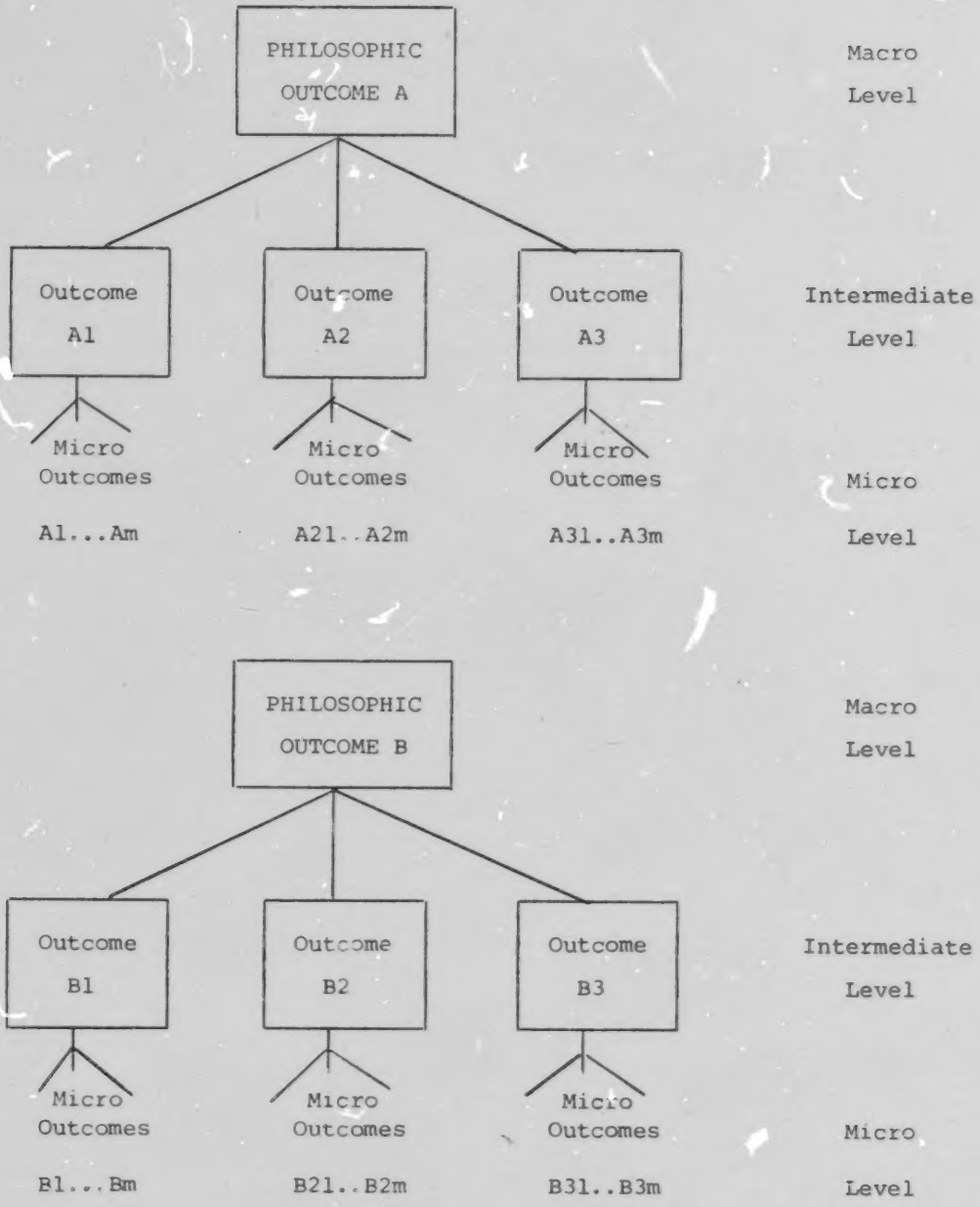
The evaluation of occupational curriculums is important, regardless of whether the programs are relatively new or of long standing. Most of the things said here are also applicable to the evaluation of other programs as well. If the evaluation is soundly done, it accurately points to the merits and shortcomings of the program, and these findings in

turn become the basis for making decisions about the future operation of the curriculum. Considering the effect such programs have on the students who pass through them, the faculty who teach in them, and the cost to the public which finances them, any advancement in the decision making process that results in a better program is welcome.

At this point, considering the varied meanings associated with "program evaluation" found in the literature (see Moss, 1968; Lessinger, 1970; Rouche et al., 1971; Medsker, 1971), we should clarify just what is meant by the concept in this chapter. There are four aspects to new program evaluation as used here. First of all, the evaluation of a new program must be comparative. By that, we mean the actual curriculum outcomes should be compared to the expected outcomes - it is obvious to see why development of the behavioral objectives are essential when this approach to evaluation is embraced. An earlier section discusses behavioral objectives in terms of their development by faculty. With the intended program outcomes stated in behavioral terms, they are measurable, and therefore can be compared to the intended outcomes. But this is not the end of our evaluation endeavor; we should also attempt to refine this process by trying to determine what outcomes are due to the characteristics of the curriculum and student characteristics. After all, each student walked into the program with his own repertoire of intellective-demographic characteristics and these differences within the group could result in differences in the outcomes. As program evaluators, we need to find ways to determine those program outcome differences that are attributable to the interaction of program and student characteristics. This then enables the evaluator to more accurately identify those program outcomes that are attributable to the

characteristics of the curriculum itself. Having isolated these from the other outcomes, they can be compared to the hoped for outcomes, which are to be used for making judgements about the new curriculum.

Worthy of further consideration is the identification of program outcomes that are attributable to characteristics of the curriculum, (as opposed to those attributable to a combination of factors) and are to be used in the evaluation. Instructional outcomes would be included in the things to be evaluated, as would be the outcomes that deal with the philosophy or value system of the program. This means the philosophy or value system of the new curriculum must be established in behavioral terms, just as the instructional components need be. Furthermore, anticipated outcomes can be stated at two or three levels of specificity as illustrated in Figure 2. The most general (macro) level deal with broadly stated outcomes which express a philosophic or value position (mentioned in the preceding sentence). These outcomes are likely to not be directly measurable in behavioral terms. This would be done at the next level, where the stated outcomes are in the form of measurable indices of the more general statements. Then there would be the most specific or micro outcomes, which sample the behavioral outcomes. The outcomes to be examined in all three levels of specificity must be consistent with the overall intentions (i.e. objectives) of the new curriculum. This point is stressed because original goals are sometimes displaced by the means (Merton, 1957). The evaluation can identify this only when the original outcomes are those actually examined. Example: Assume a new broad based electronics curriculum has been in existence for just over two years and the first class has graduated. One of the general outcomes of the program was to improve the quality of electronics



HIERARCHY OF EVALUATIVE OUTCOMES

FIGURE 1-2

paraprofessionals made available to regional and state industries (this is a broad philosophic outcome). A more specific outcome might be to increase the ability of electronic's paraprofessionals in the use of certain electronic instruments in a variety of business and industries. A measurable index of this group of abilities would be the overall time required to prepare persons to operate and utilize these electronics instruments at predetermined skill levels. One of the several micro outcomes within this cluster might be the time needed to prepare the students to operate an oscilloscope for a preselected variety of voltage and frequency measurements. The above example is a very limited one, since it is restricted to only one illustrative outcome at each of the three levels. It should be noted that the administration plays a part in the development of the more general goals while the micro outcomes are determined by faculty. In actuality, the more specific outcomes are more numerous than the general ones. Therefore, a pyramiding of lower level outcomes under each philosophic or value statement would be found in actuality. See Figure 2.

A fourth consideration in evaluation of new programs is to associate monetary values to program outcomes. This would be an attempt to measure the cost per student for the program, and a cost benefit ratio could be established. It would also be useful in determining the cost of the particular program and can provide at least a partial basis for comparing its costs with other programs. Furthermore, cost-benefit ratios can be used to assess the relative efficiency of selected occupational programs. As an illustration - the cost-benefit ratio of a new electronics program in college A can be compared to the same ratio in colleges B, C, ...to determine which are most efficient. This approach has considerable

implications for state-wide evaluation efforts. Furthermore, it may also have usefulness within a given college for examination of its various occupational program offerings. There are several limitations to this approach, perhaps the most important one being the inherent difficulty in assigning dollar values to all the outcomes of an occupational curriculum. However, careful development of cost-benefit ratios, in spite of their limitations, are another source of information to be used in evaluating new programs. Although they have not been widely utilized up to now (only seven cost-benefit analysis studies had been reported in a review of this approach by Little, 1970), an increase in their use can be expected.

Another problem related to the evaluation of new occupational programs, which is becoming increasingly more commonplace, has to do with the fact that significant numbers of graduates from certain two-year occupational programs go right on into a baccalaureate program instead of entering the world of work. This is in conflict with the philosophic goal of preparing associate degree paraprofessionals but is in agreement with another philosophic goal that more and more of these programs are embracing--to provide the first two years of a four-year occupational curriculum. The extent to which the former goal is served determines the limitations placed on the latter philosophic goal. Certain broadly oriented programs attempt to serve both these value goals--but for different people. What it reduces to in some cases is that those who do reasonably well academically in the associate degree program often have the option of continuing toward a baccalaureate degree or seeking employment. Some studies have found that surprisingly high percentages of associate degree graduates in certain programs elect to continue as

full-time students in baccalaureate programs (Alden, 1970). In spite of the fact that many occupational programs at the associate degree level are embracing both philosophic goals, and the advanced degree idea improves the attractiveness of the program to certain potential students, it is a contradiction in values and creates tension within the program. In an earlier paragraph it was pointed out that those outcomes that are attributable to some combination of curriculum and student factors should be discounted in the evaluation of that program. Applying this principle to the situation discussed here, it would be inappropriate to consider the percentage of students who transfer into four-year programs as a measure of program effectiveness--there is reason to believe that has as much to do with the initial abilities of the student as with the two-year program which he completed.

Selection of Students for the New Program

In addition to his orientation (as discussed in an earlier section), students for a new occupational program should be selected on the basis of: a) interest in the particular occupational area; b) a predicted reasonable chance of successfully completing the program.

Both of these factors deal with the actual content of the curriculum, which ought to be determined only after establishment of the behavioral objectives, as discussed in an earlier section. Therefore recruitment of students for a new program would likely not begin in earnest until the planning of the curriculum has reached the behavioral objective stage. Describing what a program is all about is probably best done, at least from the viewpoint of potential students, in terms of the behavioral objectives. Telling them about the things they will learn to do in the

program, along with the kinds of work styles that they may expect to encounter when they graduate, is an effective way to describe a program and its associated occupational area. Information provided in this manner would give them a reasonable basis for deciding whether or not they are interested in it. This is the first phase of student selection.

Describing the program in the manner just described would be done in a number of places and in a number of ways. The message can be directly provided to secondary school seniors, returning veterans, persons ready to switch jobs, and in some cases mothers preparing for reentry into the world of work. The most desirable approach is the direct one--where someone who knows about the program tells others about it and remains on the scene to answer whatever questions they might have relative to the curriculum, job possibilities, and administrative details relative to enrollment. An enthusiastic presentation, particularly to high school seniors, can arouse considerable interest if the program is a good one. Second best, in terms of getting the word around about the new programs, are announcements in the various communications media likely to be used by potential students (such as local radio and television stations, the local newspaper, etc.). Third best in terms of effectiveness, but very frequently utilized because of its ease of implementation, is the use of brochures, booklets, etc. which describe the new program.

The second phase in student selection begins when a student indicates interest in the program. Not everyone should be admitted into an occupational program merely because he expresses a desire to enroll. Before attempting to solidify his interest in the program it is probably wiser to check into his personal-academic characteristics that are

relevant to his chances of successfully completing the program. The first such review can be merely a rough assessment, which will suffice to identify the most obvious ones that are either underqualified or overqualified for the curriculum. More careful consideration would be given to those that are marginal. The most pronounced unqualified applicants should be counseled into occupational programs that impose lower cognitive demands. The overqualified applicants should be counseled in the other direction--into another occupational program that is more cognitively demanding or into the more traditional academic programs in senior colleges and universities. Both types of students described above should be counseled into other programs that would increase their chances of successfully completing the curriculum they enter. Successful counseling of this type will reduce the dropout rate of the program from present rates (fifty percent and above in many two-year colleges) to less than one in ten.

Student selection requires a cooperative effort of a competent team consisting of counselors, faculty, and administrators. The counselor's role is to identify the academic-cognitive possibilities of those potential students indicating an interest in the new program, the faculty could assist in providing curricular details to them as requested or otherwise considered necessary, and the administrators' role is to determine matters relating to class-laboratory scheduling, class size, meeting places of classes, and the like.

It ought to be pointed that programs that are really good, both in terms of what happens during the two-year sequence in college and what opportunities await the graduates upon completion, eventually have little difficulty in attracting students into the curriculum. Usually, although

it may be heatedly denied, programs that have difficulty in attracting students are bad programs and "the word is out" as far as the students and other faculty are concerned.

Liaison Between the New Programs and the Outside World

In addition to having a well designed program, considerable involvement between potential employers of the graduates and the educators is highly desirable if the program is to attain its maximum success. Ideally, there would be a more or less continuous exchange between employers and educators. The representatives of employers would contribute ideas to help keep the program relevant. The faculty would then translate these into program activities that result in improved student preparation.

The involvement between educators and employers can be at several levels (Gillie and Pratt, 1971). Formal relationships, in the form of advisory committees are sometimes established. In other cases, employers and educators may work together in an informal or ad hoc manner.

Since advisory committees are commonly utilized, we should examine possible forms they can take. There are three major types of advisory committees in common usage in two-year colleges, they are (Riendeau, 1967): a) general advisory committees; b) occupational advisory committees; c) joint apprenticeship committees. As implied by its name, the general advisory committee is usually charged with broad responsibilities, such as reviewing all the occupational programs offered by the college. The occupational advisory committee, on the other hand, most frequently is asked to advise the educators in matters regarding a specific curriculum. Therefore, an occupational advisory committee should be appointed upon initiation of a new program. Such a committee could be helpful in

the following ways (Riendeau, 1967; Burt, 1967): 1) serve as a communication channel between college and related occupational groups in the community; 2) assist in the identification of skills needed by the graduates; 3) suggest related occupational information that might be included in the curriculum; 4) assist in finding competent teachers for the program; 5) assist in evaluation of che program; 6) assist in improving the visibility of the program in the community; 7) assist in the recruitment of students; 8) provide internships and cooperative work/study positions; 9) provide jobs for the graduates. Concluding, the formation and wise utilization of an occupational advisory committee can be a good liaison mechanism for two-year college occupational programs.

Summary

The initial step in the design of occupational programs is the establishment of behavioral objectives. Having identified these, the program designer has a sound basis for selection of subject matter content, which should be aimed at achieving the objectives. An important concern with regard to curriculum design is to determine the program orientation. A broad based curriculum is one in which the design is to prepare students for a fairly large number of jobs in a broadly defined occupational area. The narrow based curriculum differs in that its courses are usually conducted at a practical level and aim directly at specific jobs. The determination of program orientation should be made primarily on the basis of program objectives and the kinds of students most likely to enroll in the program. The kinds of students that should be sought for occupational programs can be divided into two categories, which can be called the career oriented students (who would be best

served by narrow based programs) and academically oriented students (who would do best in the broad based type occupational programs).

The distribution of courses in occupational programs is examined. Course types can be categorized as occupational, support, and general education. There is no evidence at this time to indicate that an optimum ratio of these three types of courses exist. The laboratory shop experiences are essentially the very heart of most occupational programs and differ according to program orientation.

A scheme for the evaluation of the program should be established and understood by the faculty prior to the beginning of the new curriculum. A good evaluation strategy will accurately point to the merits and shortcomings of the program and can be used as the basis for making decisions about the future operation of the program. A hierarchy of evaluative outcomes, which includes what are called the macro, intermediate, and micro levels, and a discussion of the cost-benefit aspects of evaluation is included. In the selection of students for new programs, in addition to matching students' orientation with program orientation, other criteria should include: interest in that occupational area and a predicted reasonable chance of successfully completing the curriculum. The last section of this paper stresses the importance of establishing considerable interaction between future employers and the educators involved in the program, particularly the use of advisory committees.

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2. THE USE OF FOLLOW-UP STUDIES FOR INCREASING CURRICULUM RELEVANCY*

Introduction

Follow-up studies have been a common phenomena in American education for at least several generations. There are various reasons given for conducting follow-up studies of school graduates (Little, 1969), but most of them have fallen short of being sufficiently utilitarian for curriculum planners. From the point of view of the faculty responsible for development of a relevant curriculum, the ideal process would include: 1) the identification of relevant curriculum topics via research; 2) incorporation of these established topics into an revised and updated curriculum. Practical educators are aware of the chief defect in this entire process--the coupling of the research findings into the actual curriculum. More often than not, the failure is due to lack of attention given to the process by which new ideas are diffused to those who should put them to work.

Curriculum relevancy, while of considerable importance throughout education, has a particular urgency in vocational programs where a major goal is preparation for entry into occupations. Assuming that one of the major goals of vocational education is to prepare persons for the kinds of activities that would be required of them on their respective jobs, then we should seriously look into what is needed by the graduates and to compare this with the preparation they actually receive in their vocational programs.

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*Extracted from classroom lectures, March 1973.

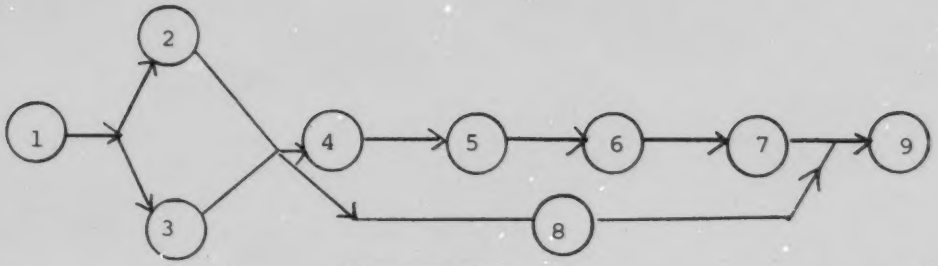
Because of our varying economy, and the on-going and sometimes rapid change in job characteristics, there is a need for: 1) a more direct mechanism to assess the relevancy of existing vocational program course content to present jobs; 2) development and implementation of special in-service teacher training programs in which instructors are taught how to modify their courses so that the content more closely matches job needs as expressed by the graduates.

The desire to achieve the above is not new to vocational educators, indeed it has long been a central rational for providing occupational education. The reader should be aware of this fact. What is described in the following paragraphs is a continuing attempt to improve the ways in which we can achieve the "Nirvana" of vocational education--to provide students with those most relevant ingredients for successful and satisfying occupational performance. Described herein is a procedure designed by this author which utilizes a follow-up survey instrument and an in-service teacher training workshop for coupling the findings into the curriculum by the teachers themselves. Although the procedure described here was performed with two associate degree vocational programs (electronics engineering technology and drafting design technology), the author believes the approach and overall procedures (with some modifications to accommodate unique situations) can be applied to most secondary and post-secondary occupational curriculums.

Figure 1 is flow diagram of the project described herein.

Design and Conduct of the Survey

The first step in the procedure was the identification of those topics hypothesized as most important. These were solicited from the



FLOW DIAGRAM

FIGURE 2-1

1. Determination of central topics from the faculty.
2. Design of questionnaire.
3. Selection of the sample.
4. Mailing and collection of the questionnaire.
5. The findings and translation into curricular suggestions.
6. Identification and the training of change agents and opinion leaders.
7. The feedback conference.
8. On-going evaluation of the project.
9. Final evaluation.

faculty members in the two programs. Each faculty member was asked to respond to an open-ended query. The topics submitted by the faculty in each program were tabulated and those mentioned most frequently were chosen. Because these were considered to be the central aspects of the two curriculums by the faculty, it is reasonable to assume that they were taught with that type of emphasis by the faculty. Therefore, it was felt these curriculum items are the ones in which the graduates should be queried with respect to the degree to which they are needed by the graduates on their present jobs.

Based upon the above deduction, these topics were incorporated into a questionnaire. It was mailed to one-third of the graduates of the five classes from 1967 to 1971. The graduates were stratified by curriculum and graduation year, from which the final sample was randomly chosen. The electronics graduates were asked to rate twenty topics and the drafting design graduates rated a total of sixteen items.

A strategy was inaugurated (Gillie, 1971) in which a series of follow-up letters were sent in an attempt to increase the rate of response. More than sixty percent of the sample returned their questionnaire, a procedure that took about 4.5 weeks. In order to determine, to some extent at least, whether those who did respond were "different" in terms of answers to the questionnaire items, 10% of the non-respondents were randomly selected and contacted by telephone. Ninety percent of these did send in completed questionnaires. Using the results of a follow-up test of possible t-tests (ANOVES/ANOVUM, 1971), we concluded there were no significant differences in answers to the questionnaire items between: 1) early and late respondents; 2) late respondents and non-respondents; 3) early respondents and non-respondents.

The Findings and Translating Them into Suggestions for Curriculum Changes

Having identified this homogeneity, we proceeded to analyze the data with no further consideration given to this point. A linear multiple regression technique (Hallberg, 1969) was utilized in our search for significant relationships between topics. Several significant relationships were identified in this manner (Gillie, 1973a).

Since both curriculums are essentially mathematics oriented, the significant relationships between "need for mathematics on present job"

and several other factors can be used as one bases upon which faculty can consider revising the programs. This is also based on the assumption that a major program objective is to prepare the graduate to perform in occupations related to the respective curriculum.

Also of great value in this regard are the ratings assigned to "need for mathematics on the present job" and the need for the other curriculum topics (total of twenty for electronics and sixteen for drafting design) on the present job. The respondents rated these in the five scale range of "very much," "much," "some," "little," and "none." These were equated to numerical values of 0, 2, 4, 6, and 8 respectively, from which arithmetic means were computed.

The next step was to identify and tabulate those topics rated in the "very much," "much," and "some" needed range by the graduates, which are considered to be the "relevant" items. By the same token, those topics rated in the "little" to "none" needed range were identified as the non-relevant topics.

Identification of Curriculum Opinion Leaders and Change Agents

The next step in the curriculum modernization attempt is the beginning of the most difficult part of the entire procedure. If successful curriculum changes to be made are to reflect these empirical findings, they must be adopted (i.e. accepted and incorporated) by the faculty. There is a critical coupling process between identifying the relevant and non-relevant topics and having the faculty: a) incorporate the relevant ones into the curriculum; b) disembody the non-relevant ones out of the curriculum. This process requires the active support of two special kinds of educators, change agents and opinion leaders.

They are described as follows (Gillie, 1973):

1. Opinion leaders are those faculty members who can influence the others to accept the recommended changes. They can be identified by queries addressed to those administrators who work with faculty on a day-to-day basis.
2. Change agents are those administrators who can provide the facilities and other means needed to implement the suggested changes. They are the administrators associated with responsibilities for scheduling programs, assignment of faculties and facilities.

The two change agents and two major opinion leaders were identified at this point in the project.

Preparation of Opinion Leaders and Change Agents for Conduct of Feedback Conferences for Faculty

Having identified the change agents and opinion leaders, they were then assembled for the purpose of presenting the findings and to solicit their leadership. From these meetings the change agents and opinion leaders agreed upon certain aspects of the findings. Having won them over into believing there is a need for incorporating certain curriculum changes, the opinion leaders and change agents had to prepare presentations to the faculty members as a whole. This required several "training" sessions between the change agents, opinion leaders, and the researcher. The chief purpose of these sessions was to enable the opinion leaders and change agents to prepare themselves for the conduct of the faculty feedback conference.

Conduct of the Feedback Conference

The researcher's role is that of a dispassionate source of data for the feedback conference leaders--the opinion leaders and change agents. The leaders' role is to prepare a presentation that would include: 1) the findings deemed acceptable by them and which they are willing to "sell" to the faculty members; 2) concrete and specific proposals for incorporating the findings into the curriculum.

During and after the presentations, provisions will be made to allow faculty to gather in small section groups. This is where the initial changes are made. The importance of incorporating the agreed upon changes into the curriculum as soon as possible will be stressed. The curriculum coordinators (the opinion leaders in this case) and the change agents have indicated their willingness to assist the faculty members during the transition period.

State of the Project

As of this writing, the feedback conference is in the final planning stage, with the actual conference scheduled for mid-June of 1973. After that, an assessment of the ultimate success of this approach will be made one year after the conference (Fall 1974).

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3. INCREASED RELEVANCE THROUGH CURRICULUM REVISION FOR MATH BASED POST-SECONDARY VOCATIONAL PROGRAMS*

Introduction

Follow-up studies of school graduates are a relatively common activity, although reasons given for conducting them are varied (Little, 1969). Many of the reasons allude to a desire to obtain some idea of relationships between school program and employment accepted. The follow-up study of associate degree graduates, partially described in this paper, is among those with such a concern.

Curriculum relevancy while of considerable importance throughout education, has a particular urgency in vocational programs where a major goal is preparation for entry into an occupation. Assuming that one of the major goals of vocational education is to prepare persons for the kinds of activities required of them on their present jobs, then we should seriously look into what is needed by the graduates and to compare this with the preparation they actually receive in their vocational programs.

Because of our varying economy, and the ongoing and sometimes rapid changes in job characteristics, there is a need for: 1) a more direct mechanism to assess the relevancy of existing vocational program course content; 2) development and implementation of special inservice teacher training programs in which the instructors are taught how to modify their courses so that the content more closely matches job needs as expressed by the graduates; 3) availability of the most recently acquired job activity information for use by employment counselors.

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*Presented at the National American Personnel and Guidance Association Conference in San Diego, California on February 12, 1973.

The desire to achieve the above is consistent with the central rationale for providing occupational education. Attempts to achieve the "nirvana" of vocational education--to provide students with those most relevant ingredients for successful and satisfying occupational performance continues. The study described herein is one such endeavor. The procedure includes: a) design of the research instrument; b) selection of the sample; c) conduct of the research; d) translation of results into suggestions for curriculum changes; e) provision of data to counselors for use with students and graduates; f) identification of curriculum opinion leaders and change agents; g) preparation of opinion leaders for conduct of feedback conferences for faculty and counselors; h) conduct of the feedback conference; i) initial evaluation of the entire process.

Design of the Research Instrument

The first step in the procedure was the identification of those topics hypothesized as most important. These were solicited from the faculty members in the two programs (electrical engineering technology EET and drafting design technology DDT). Because these topics were considered to be central aspects of the curriculum by the faculty, it seemed reasonable to assume they were taught with such an emphasis. Therefore it was felt these curriculum items are the ones which the graduates should be queried as to the extent to which they are needed by graduates on their present jobs. Based upon the above deduction, these topics were incorporated into the questionnaire.

Selection of the Sample

One part of the sample, the 1955-69 graduates, where those used in the first phase of the follow-up study which was conducted in 1969-70

(Gillie, 1971). They were originally selected on a stratified random basis where strata were year of graduation and curriculum (Cochran, 1953). Added to this was a group of the 1970 and 71 graduation classes, chosen in the same manner. Approximately 30 percent of all graduates of the EET and DDT programs were selected, resulting in a total of 665 EET and 813 DDT graduates.

Conduct of the Research

Having selected the sample, an earlier devised strategy (Gillie, 1971) was used in which a series of several follow-up letters were sent in an attempt to increase the rate of response. About 62 percent of the respondents returned their questionnaires (420 EET and 491 DDT) while another 4.4 percent were declared "undeliverable" by postal authorities. This procedure took about 4.5 weeks.

In order to determine, to some extent at least, whether those who did not respond were "different" in terms of answers to the questionnaire items, 10 percent of the non-respondents were randomly selected and contacted by telephone. Sixty graduates were contacted in this manner, and 54 of them (90 percent) responded with completed questionnaires (29 EET, 20 DDT, 6 from other programs).

A comparison of the responses for six of the major questions was made. From the first 25 percent of the respondents, 54 graduates were randomly selected. This process was repeated for the last 25 percent of the respondents. A series of comparisons between them and the telephone follow-up group were made.

A test among the three types of groups mentioned above on six questionnaire items was conducted. The analysis of variance for five of the six questions showed no difference among the three groups (early

respondents, late respondents, telephone respondents). In one of the analysis a difference among the three groups was found. Using a follow-up test of possible t-tests (ANOVES/ANOVUM, 1971) it was found that the telephone group differed from the early and late respondent groups. However, the overall ANOVA which uncovered the difference among group means violated the assumption of homogeneity of variance and therefore should be interpreted with caution. The group which had the abnormal variance was the telephone group. This analysis enables us to at least suspect there were no significant differences between: a) early and late respondents; b) between late respondents and non-respondents; c) between early respondents and non-respondents), in terms of the questionnaire topics.

The Results

Having identified homogeneity between early, late, and non-respondents, we proceeded to search for significant relationships between "need for mathematics on present job" and several other questions in the instrument. Using a linear multiple regression technique (Hallberg, 1969), four significant relationships were established (see Table 3-1). These relationships are:

1. On the average, those graduates who rated "need for mathematics on present job" highest also:

   A. rated "the relationship between present job and associate degree program" highest;

   B. rated "satisfaction with activities associated with present job" highest;

   C. selected activities associated with "things related" job orientation that were most cognitive in nature. The seven activities, in descending cognitive level, are: 1) setting-up; 2) precision working; 3) operating-controlling; 4) driving-operating; 5) manipulating; 6) tending; 7) handling;

D. rated "data related job orientation" highest (where the options were "thing related," "people related," and "data related," which are described in the Dictionary of Occupational Titles.

Another linear multiple regression analysis was computed where "need for math on present job" was the dependent variable and certain math related course topics of each curriculum (see Tables 3-3 and 3-4) were independent variables. Five significant relationships were identified in the EET program (Table 3-2a) and three significant relationships were found for the DDT curriculum (Table 3-2b).

2. On the average, those EET graduates who rated "need for math on present job" highest also rated present job need for science, computer programming, network theory, and AC circuit analysis highest and assigned lowest ratings for semiconductor theory.

3. On the average, those DDT graduates who rated "need for math on present job" highest also rated present job need highest for science, graphical solutions, and need for strength of materials.

Statements 2 and 3 indicate those curricular topics deemed most needed by the graduates who also indicated the highest need for mathematics on their present jobs. But these relationships only point in the direction of the intent of the investigation--to examine the degree of relevancy of curriculum content.

A more direct attempt was made by having the respondents rate the need for mathematics and several mathematics based curriculum topics on their present jobs (see Tables 3-3 and 3-4). The respondents rated these items in the five scale range of "very much," "much," "some," "little," and "none," with numerical values of zero, two, four, six, and eight respectively, from which arithmetic means were computed.

Although such an investigation should not be the sole basis for determining present job relevancy of certain course topics, this type

TABLE 3-1

EET AND DDT GRADUATES

N = 960

	Independent Variables						
Dependent Variable	RELATIONSHIP BETWEEN PRESENT JOB AND DEGREE	SATISFACTION WITH ACTIVITIES ON PRESENT JOB	MOST FREQUENT ACTIVITY IN THE "THING" RELATED GROUP[a]	JOB ORIENTATION MOST FREQUENTLY ENCOUNTERED (DATA, PEOPLE, THINGS)	INTERCEPT	R^2	SIGNIFICANCE OF F-RATIO[b]
NEED FOR MATH ON THE PRESENT JOB	0.24*** (.03)	0.15*** (.03)	0.03* (.01)	0.20*** (.04)	0.82*** (.12)	0.14	0.001

*Significant at .05 level

**Significant at .01 level

***Significant at .001 level

[a]Order of the "Thing" Related Activities: Setting-up; Precision-working; Operating-Controlling; Driving-Operating; Manipulating; Tending; Handling and Other.

[b]The initial F-ratio in the Full Model was significant at the .05 level, therefore the restricted model was calculated.

[c]Standard Error.

TABLE 3-2A

EET GRADUATES

N = 449

Dependent Variable	Independent Variables: SCIENCE	SEMI-CONDUCTOR THEORY	COMPUTER PROGRAMMING	NETWORK THEORY	A.C. CIRCUIT ANALYSIS	INTERCEPT	R^2	SIGNIFICANCE OF F-RATIO[a]
NEED FOR MATH ON THE PRESENT JOB	0.38*** (.03)[b]	-0.16*** (.03)	0.16*** (.03)	0.15*** (.04)	0.15*** (.03)	0.25* (.10)	0.51	0.001

*Significant at .05 level

**Significant at .01 level

***Significant at .001 level

[a]The initial F-Ratio in the Full Model was significant at the .05 level, therefore the restricted model was calculated.

[b]Standard Error.

TABLE 3-2B

DDT GRADUATES

N = 511

Dependent Variable	Independent Variables: SCIENCE	GRAPHIC SOLUTIONS	STRENGTH OF MATERIALS	INTERCEPT	R^2	SIGNIFICANCE OF F-RATIO[a]
NEED FOR MATH ON THE PRESENT JOB	0.27*** (.03)[b]	0.16*** (.03)	0.18*** (.03)	0.10 (.09)	0.43	0.001

*Significant at .05 level

**Significant at .01 level

***Significant at .001 level

[a]The initial F-Ratio in the Full Model was significant at the .05 level, therefore the restricted model was calculated.

[b]Standard Error.

TABLE 3-3

LAST FIVE EET GRADUATION GROUPS ARITHMETIC MEANS OF "NEED FOR SELECTED TOPICS ON PRESENT JOB"

EET	67	68	69	70	71
Math	2.76	3.10	3.27	3.50	2.26
Science	4.07	3.61	3.73	3.88	2.20
English	2.21	2.26	2.23	3.12	2.13
Social Science	5.86	6.26	5.59	5.72	1.68
Report Writing	3.03	3.03	3.50	3.96	3.02
Semi-Conductor Theory	4.97	3.55	4.64	4.20	3.13
DC Machinery	5.86	5.94	5.16	4.24	2.85
Transistor Circuit Analysis	5.03	3.87	4.77	4.08	3.07
Machinery Control Methods	4.55	5.55	4.23	4.36	2.62
Spec. Solid State Devices	4.97	3.61	4.55	4.12	3.07
Logic Circuits	5.17	3.68	4.82	4.56	3.02
Integrated Circuits	5.24	3.87	5.23	4.64	3.26
Use of Elect. Test Equipt	3.59	2.71	3.25	3.44	3.49
AC Machinery	5.38	5.29	3.68	3.92	3.12
Computer Programming	4.90	4.71	5.64	5.88	2.80
DC Circuit Analysis	4.34	4.19	4.50	3.92	3.32
Amplifiers	5.72	4.71	5.59	4.76	2.99
Network Theory	6.14	5.48	5.32	5.20	2.28
Electronic Circuit	5.45	4.97	5.32	5.04	3.36
AC Circuit Analysis	4.41	4.77	4.09	4.00	2.93

Legend: 0.00 = very much
2.00 = much
4.00 = some
6.00 = little
8.00 = none

TABLE 3-4

LAST FIVE DDT GRADUATION GROUPS ARITHMETIC MEANS OF "NEED FOR SELECTED TOPICS ON PRESENT JOB"

DDT	67	68	69	70	71
Mathematics	2.50	1.36	2.57	3.18	2.91
Science	4.67	4.16	4.62	5.36	4.87
English	2.77	2.64	2.74	2.86	3.09
Social Science	6.33	6.40	5.71	6.09	5.87
Freehand Sketch	2.53	3.12	3.21	3.27	3.43
Multiview Layout	3.20	4.24	3.71	3.73	3.91
Graphical Solutions	5.27	5.04	5.10	4.64	4.83
Kinematics	5.40	6.00	6.14	6.00	5.96
Strength of Materials	4.27	4.48	4.24	4.95	4.52
Static Load	5.07	5.04	5.05	5.55	5.52
Dynamic Load	5.67	5.76	5.33	5.86	5.70
Analysis of Structures	4.80	5.12	4.95	5.05	4.87
Manufacturing Processes	4.80	5.68	5.00	4.77	4.65
Product Design	4.13	4.80	4.81	4.55	4.83
Report Writing	4.47	4.40	4.57	4.77	5.48
Computer Programming	6.93	6.72	6.19	6.36	6.70

Legend: 0.00 = very much
2.00 = much
4.00 = some
6.00 = little
8.00 = none

of data is suitable for determining whether the topics ought to be reexamined by the faculty. The study obtained relevancy ratings of selected topics from graduates of the classes from 1955 through 1971 inclusive. One can question how far back we should go in considering these responses. Having no "hard and fast" guidelines on this matter, the analysis was limited to the five most recent graduation classes (1967-71). Those topics rated in the "very much," "much," and "some," needed range (means between 0.00 - 4.00) by the graduates were then identified.

The strongest affirmation of the present job relevancy was found for six topics in the electronics program and four topics in the drafting-design curriculum. The remainder of the topics received ratings in the "little," "some," to "none" range (means between 4.01 and 8.00). These topics ought to be examined by the respective faculties for the purpose of determining what reactive measures, in the form of curriculum revisions, the respective faculty groups would consider appropriate.

Provision of Data to Counselors for Use with Students and Graduates

The same data upon which faculty members would review the curriculum is also of value to counselors. Provision of these data in the form of accurate and easy to understand information on the relationships of mathematics and certain highly related mathematics topics to counselors for use with potential students would provide an additional basis for intelligent program selection by students. Such information would enable the counselor to inform students of the minimum level of mathematics needed for entering the program and also the mathematics level required by the graduate in order to function in typical technician occupations. In

addition, knowing the degree of relevancy of the course topics provides the counselor with additional data for employment counseling.

Identification of Curriculum Opinion Leaders and Change Agents

Having described the potential of the findings for counselors, we now proceed to describe the most difficult part of the entire procedure. If curriculum changes which reflect these empirical findings are to be successfully made, they must be adopted (i.e. accepted and incorporated) by the faculty. A critical coupling process exists between identifying the relevant and non-relevant topics and having the faculty: a) incorporate the relevant ones into the curriculum; b) disembody the non-relevant ones out of the curriculum. This process requires the energetic support of two special kinds of educators, change agents and opinion leaders. They are (Gillie, 1973):

1. Opinion leaders are those faculty members who can influence the others to accept the recommended changes. They can be identified by queries addressed to those administrators who work with faculty on a day-to-day basis.

2. Change agents are those administrators who can provide the facilities and other means needed to implement the suggested changes. They are the administrators associated with responsibilities for scheduling programs, assignment of faculties and facilities.

The two change agents (administration types) and two major opinion leaders (faculty members who served as coordinators for the programs) were identified in accordance with the criteria above.

Preparation of Opinion Leaders and Change Agents for Conduct of Feedback Conferences for Faculty

Having identified them, the change agents and opinion leaders were informed of the findings and their leadership was solicited. After having been won over into accepting the belief that a need for

considering curriculum changes exists, they had to prepare presentations to the faculty members as a whole. Several sessions between the change agents, opinion leaders, and this investigator were held for that purpose.

Conduct of the Feedback Conference

The researcher's role in the entire process was that of a dispassionate source of data for the feedback conference leaders--the opinion leaders and change agents. The leaders' role was to present the findings to the faculty and to establish a climate where an interchange among them could take place. This is where the initial changes could be considered. The importance of incorporating the agreed upon changes into the curriculums as soon as possible was stressed. The opinion leaders (curriculum coordinators in this case) and the change agents indicated their willingness to assist the faculty members during the transition period.

State of the Project

The feedback conference was conducted in June of 1973. Although actual changes resulting from this effort will be difficult to assess, the response of the faculty at the conference was positive. One of the most often stated comments was that they welcomed the opportunity to meet with their peers for the purpose of discussing specific curriculum topics. If the attitude displayed by the faculty is indicative of its impact upon modernizing the curriculums, then some classroom teaching changes ought to be forthcoming in the coming year.

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B. Professional Associations

4. VIEWS ON GUIDANCE: FROM AN AVA VICE-PRESIDENT*

The AVA is a professional association consisting of over 50,000 members from the 50 states. The commonality among this very large group is the fact that its members are proponents of vocational education in general, and practitioners of some specialized aspect of the profession in particular. A look at the structure of the AVA shows a total of 12 divisions, each of which (with the exception of the New and Related Division) represents one of these special sectors in vocational education. Guidance is included among these, and yet, it holds a special place in the profession in that it represents a service needed by all vocational students, in addition to being one of the specialized practices within the overall profession. Therefore, guidance is viewed by vocational educators in two ways at the same time, one of which should touch every vocational student.

Guidance is one of those components in vocational education that penetrates every program type in the profession, or at least ought to. This phenomenon results in the generation of some special problems. Because guidance, most particularly vocational guidance, is needed in some form and to some degree by all students in vocational education, it is highly visible for its impact (or lack of) upon the vocational programs.

Being thought of by everyone often has mixed blessings associated with it: guidance and those who practice it are frequently scapegoats for many of the deficiencies that creep into the vocational delivery

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*Presented at the American Vocational Association annual meeting in New Orleans, Lousiana on December 7, 1974.

system. Let me cite typical, but what I would consider patently unfair attacks suffered by guidance specialists: (1) They are accused of not directing sufficient numbers of secondary school youngsters into vocational programs. The truth is, many adolescents (and their parents agree) don't want to be placed in vocational curricula. Reasons for this have more to do with vocational educators and the manner in which they prepare persons for work than with practices of the guidance counselors. (2) They are accused of not knowing enough about the world of work to intelligently assist individuals in selecting appropriate vocational programs. The facts are that many youngsters don't have a sufficient experiential basis upon which they can make vocational choices with which they will remain for several years or more. The research shows most secondary school adolescents are not ready to make such decisions (see O'Reilly, 1973). It appears that specific vocational commitments on the part of most high school youngsters are transistory at best and highly subject to influences received from future experiences. No guidance counselor, even one with a touch of divinity, is going to be able to offer an adolescent a substitute for living experiences. Therefore, the guidance specialists would be no more proficient in this regard even if they were to offer a greatly increased amount of occupational information. The difference between vicarious and actual experiences is a crucial one for adolescents, a shortcoming for which guidance folks should be absolved of. (3) Guidance counselors are accused of not spending enough time with vocational oriented students. The truth is, they really don't spend enough time with <u>any</u> students. The solution, if one cares to seek one, is to invest in more guidance persons in the vocational education delivery system. There appears to be some evidence that such advances are going to come slowly, if at all.

On the whole, it seems to me that guidance counselors provide a very useful service to vocational education; actually it's more than useful--it's absolutely essential. We should strive to see that quality and relevant vocational guidance becomes an integral component in the very fabric of curricula in all vocational delivery systems. Vocational guidance specialists should be in frequent touch with every vocational student and their involvement should begin with prevocational activities, continue while the student is actively engaged in his chosen program, and still go on after he enters employment and for some years thereafter. Obviously, such involvement requires a tremendous increase in the number of vocational guidance counselors on the scene, which translates into finances, and this is where the real opposition lies (i.e., in acquisition of additional funding for vocational guidance related matters).

I believe most of the persons suffering through this presentation know that I am not a guidance-trained individual, which is my reason for speaking so broadly and bravely on the subject. But sometimes out of innocence (or ignorance) emerges an idea or two that the specialists themselves haven't thought about. I have a proposal for guidance folks to consider, which can result in a change that may make vocational education more realistic for all concerned. First, there needs to be vocational guidance specialists in greater numbers--to the point where there is one available for each fifty or sixty vocational students. Secondly, should this ratio be achieved (i.e., 50 students to 1 vocational guidance counselor), then the role of this individual could be drastically changed. He would spend little time in an office and instead, most of his efforts would deal with classroom-laboratory related activities of students. He would be involved in testing, observing,

interviewing, and analyzing the multiple interactions going on between students and their classroom-laboratory oriented world. Third, the underlying motive behind these intensive and prolonged student observation activities would be to identify the clues which point to a readiness of the student to move on to something else--which in many cases would be direct involvement with an actual job. Specific skill training should be delayed until this happens, and only when the student is committed to a job (i.e., he or she has been hired) should he be introduced to specialized training. Admittedly, this is a far cry from the traditional bill of fare in vocational education and will be resisted by many of the traditional vocational educators as being too radical in concept and implementation. Most of the "power" in vocational education lies in the hands of such persons so such efforts will happen only within the shelter of an exemplary or experimental program, where the traditionalists cannot get their hands on any aspects of it. My fourth point is a question: Will you accept the challenge to get involved with a few of us experimentally inclined subject-matter oriented vocational educators in such ventures? I hope that some of you will, as it is my belief that the above mode of vocational education is the best approach to date for serving adolescents in their transition from a school environment into an actual occupation found to be most conducive to their abilities and interests. Because of time limitations, the proposal is described only briefly here (see Gillie, 1973 for more details), but I would be happy to refer you to more detailed perceptions on the matter if you would write to me at The Pennsylvania State University.

You might be interested in knowing, by the way, that vocational guidance is apparently accepted as an integral part of vocational

education by many of the professionals. In a recent study (Gillie and Hutchinson, 1974) vocational educators were asked: "Do you devote any of your professional time to activities related to guidance and placement?" Just under 70 percent answered in the affirmative and those that answered "yes" spent an average of 11 percent of their time in these activities. I would venture to say that these are persons related to conventional vocational programs and not the variety proposed above. So even in the usual vocational curricula, a substantial amount of vocational guidance-placement services are needed. But the proposed new approach would call for a heavy infusion of additional vocational guidance counselors.

In conclusion, I believe vocational educators do perceive the role of guidance (most particularly vocational guidance) as a crucial one in the vocational education delivery system. I personally would like to see more interactive-type involvements between vocational guidance specialists, students, and vocational teachers in a direct day-to-day "on the scene" manner rather than the "I'll see you in my office" approach. It is my belief that the AVA views vocational guidance as an essential component in the vocational delivery system and this is manifested in the deliberate provision for funding for such efforts in the federal vocational education legislation (PL 90-576) which came about largely as a result of persistent efforts by the AVA. Many of us look to you for direction in your share of the overall endeavor. You are part of the vocational education family and I'm glad that you are. Thank you.

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5. A WORD ABOUT THE AVA: THE NATIONAL SCENE*

It's a special pleasure for me to be at your 44th Annual Convention for several reasons. First, it is indeed heartwarming to be among a group of fellow vocational educators. I have always considered ourselves a special breed of educators who are more deeply concerned with preparing people for living in the world of work than any other segment of American education. No one can deny that vocational educators are the ones who are trying to do something about this concern. Secondly, those who are here at this banquet tonight are also leaders in attempts to improve the profession of vocational education, otherwise you wouldn't be taking the time away from your families and recreational pursuits to be here this weekend. Thirdly, I welcome the opportunity to address vocational educators within the context of a state vocational association--because state associations need to be strengthened if the AVA and therefore the profession is to remain rigorous. I hope Mr. Wenroy Smith and I can provide you with some worthwhile suggestions relative to that important matter.

The American Vocational Association is on the verge of making some very important adjustments. These changes are needed to help keep the AVA and the profession up-to-date. Without some of these alterations and additions, it will become increasingly difficult for the AVA to serve the profession in an optimal manner. A number of the changes, if they are voted upon and approved by the House of Delegates in New Orleans next December, will, in my opinion, signal the beginning of a new era for

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*Presented at the 44th Annual Convention of the Massachusetts Vocational Association in North Falmouth, Massachusetts on May 4, 1974.

the AVA and its role in the vocational education profession. Permit me to discuss several of these in a broad manner for a few minutes. First, an increase in annual dues is urgently needed to restore the organization's budget to a sound basis. The AVA is already in a deficit spending situation and will be even more so this coming fiscal year. Furthermore, the situation will become worse if immediate remedial action isn't taken. You might be interested in knowing that the last annual dues increase (from $8 to $12) was inaugurated on July 1, 1968. Since that time, the decline in the value of the dollar has wiped out that total increase. In addition, as approved by the House of Delegates and the National Board of Directors of the AVA, the services provided by the national office have increased substantially, which creates further budget demands. Should a large increase in AVA membership be experienced within the next several years, it will help to reduce the inflationary effects upon the budget and enable us to delay the next increase in annual dues, but will not help us right now.

Second, it will be proposed that departments be eliminated and divisions be further strengthened. It is felt that an expansion in the number of divisions will permit a greater number of special interest groups to provide input into the formulation of AVA governance decisions. We know that vocational education will touch the lives of the majority of Americans, some even three to six times during their working life spans. Therefore, it is important that the AVA continue to be the vehicle for diverse professional vocational educators to have a meaningful input to the profession of vocational education. Although the categories of home economics, trade and industrial, agricultural, and so on, are indeed important and should be retained, there are others (perhaps many

others) that will cut across these traditional divisions. An example is those efforts that fall within the generic classifications of adult vocational career changing education, various forms of other adult and continuing vocational education of specific and short-term nature (particularly for upgrading and updating purposes). The proposed realignment of divisions and removal of departments (which have been notoriously impotent in some cases in the past) introduces the flexibility needed to accomplish these important trends in our profession.

Another important movement that can be easily incorporated in the proposed reorganization is the movement toward increased cooperation among vocational institutions of all stripes within the several states. I'm sure many of us here, particularly since the years immediately following the passage of the Vocational Education Act of 1963, have experienced directly or viewed some tension between the various elements in vocational education. There have been skirmishes in some places between: (a) secondary and post-secondary elements; (b) community colleges and area vocational schools; (c) area vocational schools and secondary schools; (d) community colleges and other elements in the vocational education delivery system not listed above; (e) private-proprietary and public vocational schools at various levels and institution types. The introduction of comparatively large amounts of federal dollars into the mainstream of vocational education at the state governance level has sparked such skirmishes for these funds. We all know, at this point, that the public in general and legislators in particular take a dim view of such struggles within vocational education and, in my opinion, such skirmishing diminishes the effectiveness and prestige of our profession. Much of this could have been avoided if all groups

had joined together earlier in a cohesive professional association like the AVA. The AVA was caught in the cross-fire in some ways and has in some places, especially Massachusetts and New England, acquired the reputation of being a professional organization primarily for secondary school vocational educators. While the majority of our nation's vocational educators do associate themselves with secondary schools, there are other important elements out there, as indicated above, who categorize themselves differently. The new organizational scheme permits easier establishment of such new groups within the AVA, including one or more whose major interest will be in the coordinative and cooperative aspects of the profession, where schooling level will not be a significant factor. The point is we must continue to work hard to expand the image of the AVA--it is an organization devoted to the ultimate improvement of all vocational education, regardless of subject matter specialization and institutional level. I believe the proposed changes in strengthening divisions and eliminating departments will permit the AVA to accommodate these kinds of movements in our profession.

Also proposed is a new approach to the higher leadership of the AVA. One of the by-law changes to be placed before the House of Delegates in New Orleans this December will be to establish the positions of president-elect, president, and past-president. This arrangement will enable the newly elected president to spend a one-year "internship" before taking over the leadership and also provide the president with the ongoing advice and support of his predecessor (i.e., the past president). Such an arrangement will provide a continuity of leadership that is so important to a professional association like the AVA.

Certain elements within the proposed reorganization of the AVA will better enable the association to provide national leadership for the total program of vocational education. The AVA has consistently provided input to federal legislative matters related to vocational education, and will likely continue to do so. The annual national convention is well known for being perhaps the most significant forum for the profession. Attempts to further improve the utility of the national convention to the profession and the membership are in the offing. Increased services in the national office in Washington will further enable the AVA to assist state vocational associations and state bureaus of vocational education in their efforts to improve the profession at the state level.

Another very important aspect in the reorganization, as I see it, is the strengthening of the state organizations. There has been, and will continue to be, considerable discussion on this issue. Many members believe a confederation of state organizations ought to be the basic framework of the AVA. There needs to be, in my opinion, a better mechanism whereby the state vocational organizations can alert the national organization of their needs, interests, and concerns. Many state organizations are indeed active and viable, but on the other hand, many are not. Should we wait until a state organization is representative of the vocational educators in that state before it is taken seriously? Or should we accord such recognition to a state organization initially? Some believe the provision of such built-in opportunity in the first place will make it easier for its membership to develop a viable state organization. I would suspect there are people in this room who would agree with the first proposal and, on the other hand,

there are others who would side with the second. What cuts across the entire argument, I believe, is that state organizations of the AVA do need to be given more attention by the national organization. I agree with that statement, and as a member of the National Board, you may rest assured of my active support for that position.

I want to briefly talk about the chronic problem in the New England and middle-atlantic sections of this country relative to AVA membership. When one examines actual AVA membership and compares it to potential membership, most states in this region are far below their potential membership. I'm not blaming you for this--I know full well how you are devoting a considerable amount of time (with little or no financial compensation) to the profession through your AVA state organization. One doesn't have to be an expert in these matters to know that the contributions an organization can make to its profession has much to do with the proportion of the total profession it represents. I think there are two basic reasons why many professional vocational educators don't belong to the AVA: 1) they don't really know that much (if anything) about it; 2) they don't believe it can do anything toward improving them professionally.

What can you, as an individual member of the AVA, do about it? I believe much can be done. We need to begin at the grassroots level. Each of us could informally organize a small "cell" of vocational educators in our school. The basic purpose of the cell would be to provide a highly localized forum for common problems in vocational education. This is a challenge, but it is known to be an effective mechanism for strengthening and improvement of the profession. Corrolary to this, of course, is to urge these individuals to join the state and national

vocational associations. Should the cell become sufficiently large, a local vocational "chapter" can be formed. The cell or chapter is your most effective conduit for communicating with vocational educators at the state and national scenes, as well as the local level. It will be persons like yourself who can tell other professional vocational educators about the AVA and how it can help them be better professionals.

Finally, I want to express my confidence in your ability to help move the AVA toward becoming an even more important professional organization. Furthermore, I want to express my appreciation for the great efforts expended by you up to this point in time. The whole thing starts with you, in your places of professional employment. You have done just fine up to now, and the entire vocational education profession is indebted to you. Thank you.

6. THE ROLE OF THE STATE VOCATIONAL ASSOCIATION AND THE PROFESSION OF VOCATIONAL EDUCATION*

The umbrella of the profession of vocational education is the American Vocational Association. Mr. Burkett is going to provide you with considerable insight into some of the important impacts the national association has and is making upon federal legislation and other national matters that pertain to vocational education. The AVA has been active and reasonably successful in keeping lawmakers and leaders at the national level aware of the importance of vocational education in the American educational system. Furthermore, the AV Journal is among the most highly regarded professional journals in the nation.

Ideally, each state should have a vocational association that can continuously address itself to the state level concerns of the profession of vocational education. The state association could be the vehicle for several important activities, including:

A. Assist in the preparation and passage of state legislation related to vocational education;

B. Provide various professional services for vocational students, faculty, and administrators;

C. Provide a statewide forum through publications and conferences, for the contemporary issues in vocational education;

D. Provide the impetus for establishment of local "cells" or chapters of vocational educators which would then serve as local or regional forums for the significant issues in vocational education.

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*Presented at the Pennsylvania Vocational Association Planning Conference at University Park, Pennsylvania on May 17, 1974

The major commonality running through each of these proposed activities is the continuous concern for the improvement of vocational education, along with its professional and student constituents. An association devoted exclusively to the professional concerns of its members need not differentiate between administrators, faculty, students, laymen, and legislators, since such concerns ignore such distinctions. In this fact, as I see it, lies the chief strength of a professional state vocational association.

All of us are aware of the rapid spread of faculty unionism in the public schools, which began at the secondary and has now spread to the post-secondary level of education. The positive and negative aspects of unionism in a school have been debated rather heatedly in many places. I recently witnessed such an exchange at the Technical Education National Seminar in Atlanta. Charges were hurled from both sides, but when it was all over and the guns were stilled, I came away with the feeling that the entire discourse was concerned exclusively with the giving and taking of monies and services between the management (i.e., boards of education and trustees) and faculty (i.e., union negotiators). I don't deny that such a situation might be necessary in some schools, but I would hasten to insist that the vocational educators' professional development and concerns don't fit into that type of framework. A state vocational association expressly interested in <u>professional matters only</u> is the one viable way of maintaining statewide interest in the profession of vocational education. Unions and boards (of education or trustees) negotiate in terms of all educators without dealing with the unique elements in the profession of vocational education. Such a condition

is understandable from the negotiations point of view--but if our profession is to grow and improve and thereby remain viable, we need something more.

I recently had the privilege of addressing an annual state association convention in New England. After conversing with several leaders of that group, it was clear to me that vocational teachers in that state felt their joining a union-type association would take care of all their employment concerns, including the professional aspects. The very high annual dues of such unions, in the neighborhood of $150, further discourage teachers from joining their state vocational association. I understand this same problem exists in other states. We need to address ourselves to this dilemma in a straightforward manner--vocational teachers need to be told that regardless of their position relative to faculty unions, they must be active in an association that is concerned with purely professional matters. This is a most difficult task, since the "payoff" from participation in professional associations is largely in such intangible things as being more knowledgeable in your vocational specialization, more aware of other activities going on in vocational education, more well-read on recent trends in the profession, etc. There is no immediate increase in "the take-home pay," "days off," etc. But, in spite of the non-tangible returns, I believe most vocational educators are sufficiently professional in their outlook to be willing to participate in a state vocational association if the message is carried to them. Each of us in this meeting can help by (a) aggressively recruiting membership for the Pennsylvania Vocational Association and AVA; (b) participating in the first annual PVA Conference which will be held here on Friday and Saturday, September 27 and 28. Election of

officers for 1975 will be held at that time, along with a series of presentations on topics and issues pertinent to vocational education in the nation and the Commonwealth. We're hoping that at least three hundred people will attend this first annual event. More information will be forthcoming from Nancy Gilgannon, who will coordinate the conference; (c) provide information for the forthcoming quarterly newsletter, which will be edited by Nancy Gilgannon.

And that's what today's meeting is all about. The presentations today will hopefully provide some thrust toward helping vocational educators and strengthening the Pennsylvania Vocational Association. Lowell Burkett, Wenroy Smith, and Jane Shafer are especially knowledgeable in such activities. Their sharing of some of their experiences with us today will likely assist us in our attempts to enlarge and improve the Pennsylvania Vocational Association. Your help, along with that of all other vocational educators you can enlist, is needed now. This is the year to build up the PVA, so that it can be the state association to serve the vocational education profession in the Commonwealth. We're here to help our profession, and I know we will succeed. Thank you.

C. Vocational Teacher Education

7. MISSION OF THE DEPARTMENT OF VOCATIONAL EDUCATION: GRADUATE STUDIES AND RESEARCH IN THE FUTURE*

The future of graduate studies and research in vocational education can be predicted only in terms of perceived general trends in the profession of vocational education. Contrary to what might be said by others in other places, the future of graduate studies and research is not heavily dependent upon the need for professional vocational educators. The key component is the overall acceptance of graduate studies and research in vocational education. Fortunately, as indicated by Dean Herr yesterday, the University regards our Department mission in this regard as worthy of support. This point needs to be stressed because, in my opinion, there will be a substantial change in the focus of the College in persons receiving an education in the next few years, as implied by Dean Snyder.

Even though, theoretically, 80% of the population is in need of some form of vocational education at one time or another, the actual percentage of our people who will receive such educational services within the framework of educational institutions will not change very much in the years ahead, if at all (in my opinion). Since this is a rather somber statement and can be challenged, an explanation is in order. The chief reason behind this is the dual vocational education system, which really began with the passage of the Manpower Development and Training Act in 1962. The dual system is now a fact and a very obvious one at that. In 1964, new enrollments in federally assisted work and training programs totaled 278,000. This increased to an

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*Presented to Department of Vocational Education Inservice Seminar Presentation on May 23, 1974.

estimated 2.35 million persons in 1973 (OMB, 1974). In 1973, over 13 types of training and job assistance programs were included in the Department of Labor thrust. Only six percent of the total 2.35 million enrollment were involved in institutional training (i.e., public secondary and post-secondary schools). Federal outlays totaled more than 3.4 billion dollars for these activities. You might be interested in knowing this included: $771 million for institutional training (of which only a small fraction was used in public vocational schools and colleges); $566 million for on-the-job training; $824 million for vocational rehabilitation; and 1.285 billion dollars for work support (op. cit.). It should be noted that the job placement history of these programs has been good, ranging from a high of 80% for on-the-job MDTA programs to several special efforts with records of about 30% placement (WIN and PEP). The average employment rate for all 13 programs was 45%. The programs, although dealing with the hard to train and hard to employ components of our work force, have employment rates that compare favorably with those of traditional public vocational school programs. The point I am trying to make is such efforts are viewed with positive regard by Congress and many sectors of the business-industrial community. Therefore, it is likely that vocational education funded by way of the Department of Labor, as opposed to HEW funding, will remain a viable, if not the major, element in the thrust of vocational education on the national scene. It should be emphasized these types of persons (who are hard to employ and hard to train) have been consistently ignored by traditional vocational education.

Recently enacted Federal legislation called the Comprehensive Employment Training Act, is about to be funded. Considering the turmoil

going on in Washington these days, there may be some unforetold changes in the amount of funding. Mr. Burkett, Executive Director of the American Vocational Association, has recently estimated the initial allocation for CETA will be about two billion dollars, of which only five percent is earmarked for state vocational education bureaus. It should be said, by the way, that public vocational education was originally destined to be shunted out of the finding entirely, and this was changed only after considerable pressure and testimony by several key officials of the AVA.

Other national legislative ferment is going on at the same time, and is still in the early planning states. The Vocational Amendments of 1968 (which have a five-year mandate) is to be reconsidered by the Congress. A special AVA Task Force is drafting tentative legislation with the hope of persuading Congress to accept it as the replacement of the 1968 Amendments in 1975. Although closure on this matter is not yet at hand, it appears that the new proposed bill will have five major parts or titles; they are:

1. General Provisions (for planning of vocational education);
2. Pre-Vocational Education Programs (occupational awareness, orientation, and student exploration of employment opportunities);
3. Vocational Education Program Support (secondary, post-secondary, youth--young adults--adult; student organizations; private and proprietary schools);
4. Vocational Education Program Services (teacher education, leadership development, placement and follow-up, student support programs, vocational guidance and counseling);
5. Vocational Education Applied to Research, Curriculum and Demonstration Programs (applied research, curriculum development, demonstration and implementation programs, leadership development).

A very rough estimate of the annual revenues required to implement the present thinking in terms of the above titles, according to Mr. Burkett, is about two billion dollars (about the same as proposed by CETA). The present rate of federal funding for the 1968 vocational amendments is about a half billion dollars. It should be noted that in 1971 the total national (federal, state and local) spending for vocational education in public schools and colleges totaled just under 2.1 billion dollars (Lerner, 1973) while in 1972, 2.7 billion federal dollars were invested in the Department of Labor vocational education effort (Lerner, 1973). In other words, the public vocational school component of the dual system is already, in terms of total funding support, the smaller of the two.

Of significance to our discussion today is that the dichotomization of vocational education is more or less forcing the public school sector to assume responsibility only for training of the young--in-school persons with more or less traditional backgrounds and needs. The legislation funded through the Department of Labor will give that part of the duality the responsibility for training and job seeking of nontraditional youth (i.e., disadvantaged, hard to train, hard to employ, etc.) and adults in need of mid-career changing or occupational adjustments.

Vocational education graduate studies and research, departments, while theoretically able to negotiate contractual agreements with the Department of Labor, will likely continue to emphasize the graduate studies and research services for the more traditional public vocational schools and colleges. Should the 1975 Vocational Amendments, in the general form described in an earlier paragraph, become a reality (which appears good at this moment) and at the level of funding indicated

(which I think is too high), the graduate studies and research efforts may continue at about the present rate. The Labor Department Legislation (i.e., CETA) offers little real support for such efforts, and state legislators have not been generous in those areas either.

Therefore, the 1975 Vocational Amendments will likely be the major federal source for graduate studies and research in vocational education. Title IV in the new legislation will provide greater thrust in the direction of placement and follow-up, which is an area in which the research elements of departments of vocational education in large universities can become more deeply involved. The leadership development section of Title IV would also be a logical graduate studies effort of such departments, of course.

The entire Title V portion of the proposed legislation will become a logical concern for graduate studies and research in departments such as ours. The big question, of course, is how much of the total appropriations will be earmarked for graduate studies and research. Frankly, I do not detect any burning desire on the part of the vocational education community at large to spend greater amounts of money for graduate studies and research in vocational education than is found today. Research, not warmly regarded anywhere in education, is even less regarded in vocational education in most plans. Even universities that proport to endorse such efforts proceed to contradict themselves by failing to translate words into funds. Ironically, even some persons in many states who have the responsibility for dispersing funds for vocational research at the state level have tendencies to not want to support certain types of vocational research--some of which is very badly needed. (I wish to add Pennsylvania is not one of these at this

time.) The same lack of desire is found relative to sponsoring graduate vocational education and will become even more pronounced as the surplus of teachers and administrators catches up with us in vocational education (and it will).

But there is some evidence, that the graduate studies--research aspects of vocational education are of increasingly greater interest to the university. Perhaps a major reason is that services in graduate studies and research in vocational education are a natural extension of the land grant concept, which this university continues to accept as one of its charges to its constituents. My hope and opinion is that the University will modestly increase its support for vocational studies and research as the federal sources of funds become more difficult to come by. I would predict that we will hold our own (or become slightly smaller), provided we maintain a research output at or above our present level in terms of quality. As indicated by Dean Herr yesterday, quality is of greater importance than quantity. Furthermore, we must continue to generate high caliber master's and doctoral graduates. I was pleased to hear Dean Herr state that the graduate studies-research efforts of this Department have provided us with considerable national visability in recent years, and it is essential that this be maintained. The initial impetus in this direction was provided by the late Dr. Joseph T. Impellitteri. I feel we can further improve in this regard, and believe we will do so in the immediate future. Although we cannot predict a growth-type budget for these important activities, I believe we will improve the quality of our research and graduate even more outstanding master's and doctoral persons. When compared with other elements in university education, both locally and nationally, our future looks good. Thank you.

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8. THE FUTURE OF VOCATIONAL TEACHER EDUCATION IN THE UNIVERSITIES: AN ESSAY*

Background Information: Introduction

Vocational teacher education is a complex human relations enterprise. Four of its major dimensions are: the faculty (teacher educators), the trainees (in-service and potential vocational teachers), the school (the universities and state colleges providing vocational teacher education programs), and the curricula (baccalaureate, masters, and doctoral programs, certification courses). Of maximum importance is the overall impact these dimensions of vocational teacher education have upon the preparation of students in vocational programs in the various institutions (i.e., area vocational schools, comprehensive high schools, community and junior colleges, proprietary schools, and penal institutions).

The future of vocational teacher education is, for the most part, going to be determined by the need for additional vocational teachers, administrators, and other leader types, as perceived by the overall public and educational community. Should the need be seen to be as great or greater than that for other kinds of professional educators, then it will likely receive financial support at the present or higher levels. Assessment of the need for vocational teachers is a difficult task. The great number of variables which has effect upon the number of vocational teacher positions available in a given state or the nation precludes the design of any simple device for computing such a figure. The major variables that impinge upon this include: 1) fertility of the

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*A modification of a position paper prepared at The Pennsylvania State University in November, 1973.

past 10 to 20 years; 2) number of adults who seek job recycling, skill updating, or upgrading; 3) in--out population migration trends of the region in question; 4) rate of teacher turnover; 5) predicted rate of growth of the number of students enrolled in vocational education; 6) rate of preparation of vocational teachers.

Background Information: National

Fertility. From 1950 through 1970, children aged 5 to 19 in the continental United States increased from 34.9 million to 59.5 million, a 70 percent increase. This is the group from which will come those individuals who will seek initial job preparations during the next decade. There has been a decline in fertility in the United States since 1957. Some experts believe a cyclical rise in American fertility, temporarily postponed by liberalized state abortion laws, will take effect within a few years (Davis, 1973). But even with a continuation of the fertility decline, a reduction of population in the 5 to 19 year-old group would not be experienced for many years. The rate of increase of people in this age group will likely decrease which will create a leveling off of the total numbers, but the actual numbers will not decrease for some time (Lerner, 1970). Therefore, the changes in birth rate will not have a severe immediate effect on the numbers of new vocational students.

Mid-Career Change. A phenomenon which is causing increased enrollments in vocational students is adult and continuing education efforts. Worker retraining, or mid-career change, is becoming more widely recognized as a major vehicle for overcoming the effects of such dysfunctional elements within our work force as job dissatisfaction (O-Toole, 1973).

The major impetus for the desire to undergo mid-career change by many workers is derived from three societal developments: a) the increasing rate of technological, economic, and cultural change--the commitment to one lifelong occupation is no longer as feasible as was the case with past generations; b) workers now live long enough to have a 40 year working life--a long time to spend in a single career; c) many low level workers have increased e[illegible]tations which can be achieved by way of a career change. Vocational education is an available societal mechanism for implementing this important need for mid-career change. Although the basic financial support (most importantly, a living allowance that provides the recycling worker with sufficient funds to support his family at the level to which he is accustomed) has not been fully worked out on a widely accepted basis, the need for such provisions has been recognized for some time (O'Toole, 1973; Striner, 1972; Holt, 1971; and Okum, 1963).

In light of these societal pressures, one can expect an increase in mid-career changes. The potential magnitude of this phenomenon is substantial. Assuming that an individual has a working life of 40 years and he is to make one career change during that time (considered an extremely conservative estimate), then it can be predicted that about one-fortieth (2.5 percent) of the work force, which presently exceeds 84 million, will be involved in career changing in any single year. Translated into numbers, a total of more than two million adults would be engaged in such career preparation activities annually. It should be noted that this approaches the entire community college enrollment of 1972 (AACJC Directory, 1973). In addition to this, many workers will seek training for upgrading and updating themselves in their present jobs; which can easily amount to another 2.5 percent of the entire work

force--an additional two million or more. It is reasonable to assume that there will be an increase in adult vocational education enrollments to as high as five million individuals annually.

Increase in Secondary Vocational Education. Another source of vocational students in the immediate future will be youngsters in the 15-20 year-old group. With the continued federal support of vocational education (PL88-210 and PL90-576, for example), the states may expand vocational programs so that the majority of secondary students will receive some type of vocational education. Approximately seven million students were enrolled in federally reimbursable vocational education classes in 1966-67 (Silverman and Metz, 1970). These were categorized as: 3.5 million secondary students; 0.5 million post-secondary students; and 2.9 million adults. During the same period, 16.5 million students were enrolled in secondary (grades 9-12) schools (Silverman and Metz, 1970). If about three-fourths of secondary students were provided some form of vocational education, the secondary school enrollments in vocational education would increase to 12 million. There are indications with the increase in the number of area vocational schools to over 2,100 in 1972 (AVS Directory, 1973) and the corresponding increased demand for vocational preparation, that secondary vocational education enrollments will continue to increase. This coincides with the reality of the situation in which only 20 percent of the population can expect to enter the professional ranks (Lerner, 1970). Substantiation of this continued growth is found in that secondary vocational programs in 1969 increased to eight million (Kay, 1970). Added to this impetus is the continued growth of post-secondary vocational education, particularly in the 1,140 community colleges. One study reported that about 40 percent of the

community college enrollment was in vocational programs (Gillie, 1974). Should this trend continue upward, as is expected, then the number of vocational students in community colleges will grow until more than half of their enrollments will be in vocational curriculums.

Therefore, it is reasonable to believe that the number of students in vocational curricula will increase in absolute numbers because of: a) the increased acceptance of recycling workers, commonly called mid-career change, as a necessary component in the national economy; b) the increase in the number of persons seeking updating and upgrading of vocational skills in their present occupations; c) a greater proportion of secondary school students having access to vocational education, perhaps up to 75 percent of the total; d) an increase in the number of students in post-secondary vocational curriculum, perhaps up to 50 to 75 percent of that total.

Vocational Students and Teachers. The national rate of growth in the number of vocational students and teachers between 1963 and 1969 is displayed in Table 2.1. The student-teacher ratio remained relatively constant during these years indicating that the increase in vocational teachers has apparently kept up with the growth in the number of students. The average secondary vocational class consisted of 21 students. This average was approximately the same for the seven areas: agriculture, distributive education, health occupations education, home economics, office occupations, technical education, and trade and industrial occupations.

Some Vocational Teacher Demographic Characteristics. An important vocational teacher characteristic is that the typical vocational teacher is male and in his early 40's. Assuming age 65 to be the usual

TABLE 8-1

ENROLLMENTS AND TEACHERS IN VOCATIONAL EDUCATION: NATIONAL

Year	Enrollments (millions)[a]	Teachers (thousands)[a]
1963	4.2	85
1964	4.6	85
1965	5.4	109
1966	6.1	124
1967	7.0	133
1968	7.5	147
1969	8.0	167

[a]Source: U. S. Office of Education. Vocational and Technical Education Annual Reports.

retirement age, then the typical vocational teacher has about 20 to 25 teaching years remaining in his teaching career. Since he had less than 10 years of teaching up to that point in time, average vocational teaching careers appear to range from 25 to 35 years total. About 25 percent of the vocational teachers were under 30 years old, 44 percent were in the 30-44 year-old category, and 46 percent were 45 years of age and older. Also, 14 percent had 20 or more years of teaching experience, 22 percent had 15 or more, 37 percent had 10 years or more, and 62 percent had five years or more of teaching experience. These data include all teaching, whereas vocational teaching experience was found to be correspondingly less for teachers in each of the seven categories. It should be noted that the distribution of the age span

of the teachers in vocational education and the length of time in which they will spend teaching in vocational education indicates that a considerable amount of in-service teacher education will be required in order to keep these individuals up-to-date in their classroom practices. This, of course, also has considerable implications for the future role of vocational teacher education.

Another important characteristic of vocational teachers, from the point of view being considered in this paper, is their academic qualifications. About 74 percent hold the bachelor's degree, about one-third have the master's degree or better, and about 13 percent hold associate degrees or equivalent. Eighteen percent of male and six percent of female vocational teachers hold no academic degree. The justification for employment of such persons as vocational teachers is based upon previous work experience. This appears to be more commonplace with the older teachers (five percent of those under 30, 13 percent in the 30-44 year-old group, and 16 percent of those in the 45 year and over age group). As a whole, the younger vocational teachers have sought to qualify themselves for teaching in the vocational areas by acquisition of an academic degree, whereas the older teachers, in many cases, have moved into teaching after a considerable number of work experience in that vocational area. Interestingly, this can be considered to be a mid-career change.

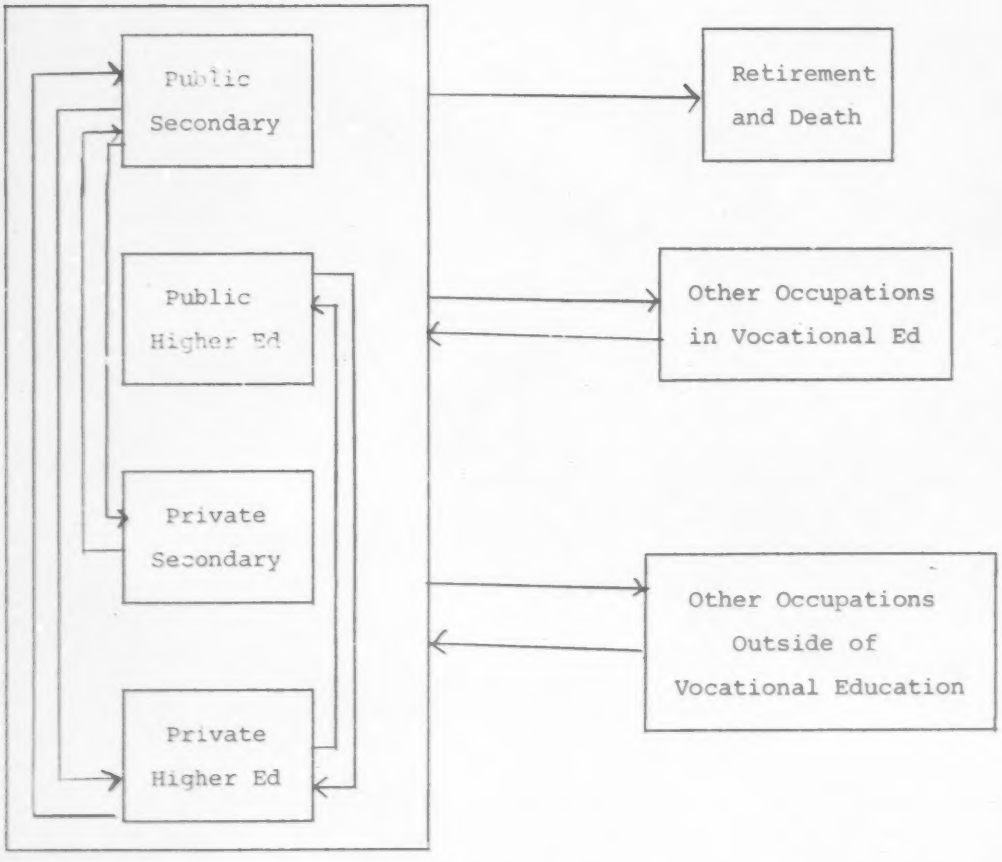
About half of the vocational teachers hold a vocational teaching certificate, while the other half hold a regular teaching certificate. The trend is for older male vocational teachers to hold a vocational teaching certificate, which emphasizes work experiences and de-emphasizes academic credentialing. More females had regular teaching

certificates. Two-thirds of the teachers in the trade and industrial group and more than half of the technical and health occupations teachers hold vocational certificates. Regular certificates prevailed in the four other vocational specialties.

Another important teacher characteristic is teacher turnover. Sources of vocational teachers include: institutions of higher education, other occupations inside education, other occupations outside education. Vocational teachers, like any other type of teacher, leave the profession for such reasons as: retirement, death, other occupations outside education, other occupations in education. A flow chart displaying this is shown in Figure 1.

The precise number of vocational teachers that transfer into and out of the profession nationally is not known to this writer. But an earlier study of turnover of public elementary and secondary school teachers in 1959-60 found that 8.1 percent of the total teaching staff left the teaching profession during that year (Lindenfeld, 1963). The separation rate was similar for all but the very small schools (with enrollments less than 600), where it was higher. No relationship was found between average salary level and pupil-teacher ratio to the separation rate. This figure of 8.1 percent turnover may be too high for the Pennsylvania experience in vocational education, but serves as a useful point of reference for the purpose of this paper.

Combining of the factors described above, in association with several assumptions, would provide us with a crude index of the number of vocational teachers needed in the years ahead throughout the nation. This in turn can be compared with the number of teachers actually being provided by the various vocational teacher training institutions in the



VOCATIONAL TEACHER TRANSFER FLOW CHART

FIGURE 8-1

country. The following paragraphs provide illustrated projections, using some arbitrarily chosen original figures as a basis for the projections. In assumption x, a no growth position is examined while an annual vocational teacher growth of two percent is considered in assumption y. This writer feels that assumption x is completely unrealistic, but it is included for examination purposes. In assumption y, an annual growth of two percent is believed to be a conservative estimate of future growth in vocational education, in light of the various factors described in the preceding paragraphs.

Projections. Total vocational teachers: 167,000[1]

Assumption X: No increase in overall number of teachers needed.

Extimate x

a) For each year 1975-1985: A five percent turnover will require 8,350 new teachers annually.

b) For each year 1975-1985: An eight percent turnover will require 13,300 new teachers annually.

Assumption Y: Vocational education enrollment will increase two percent annually.

Estimate y

a) For each year 1975-1985: A five percent turnover plus two percent overall increase will require about 11,700 new teachers annually. This discounts the compounding effect of a two percent annual increase.

b) For each year 1975-1985: An eight percent turnover rate plus two percent overall annual increase will require about 16,600 new teachers annually. Again, the compounding effect of the annual two percent increase is discounted.

Administrators and Other Non-Teaching Professionals. The ratio of teachers to administrators and other non-teaching professionals (excluding librarians, guidance staff, and psychological staff) in the public elementary-secondary schools for the period 1963 through 1967 was about 19 teachers to one administrator (Silverman and Metz, 1970). Assuming this ratio is applicable also to vocational programs as a whole, we can

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[1] Source: U.S. Office of Education Vocational and Technical Education Annual Reports. This is the 1969 figure, which is considerably below the number of vocational teachers in 1973.

assume that the number of administrators and other non-teaching professionals will amount to about 5.3 percent of the total vocational teacher supply. Therefore (using the 1969 vocational teacher total of 167,000), there are about 8,850 vocational program administrators.

Assuming a no growth situation and the turnover rates described for teachers in the preceding paragraph, a total of 440 annual replacements are required for the five percent replacement rate and about 710 administrators annually for the eight percent turnover rate. With the two percent annual growth assumption added to these turnover rates (and ignoring the compounding effect of the annual two percent growth rate), these figures become about 620 for the combined five percent replacement plus two percent growth rates, and 890 for the combined eight percent replacement plus two percent growth rates. Note should be taken of the fact that these estimates are very conservative indeed, considering that 1969 vocational program enrollments were used (the assumption being made here that the vocational enrollments in 1973 are considerably above this number). In view of the admitted low projection rate described in the preceding paragraphs, an alternative projection rate designed by another writer is presented in the following section.

Another Projection for Additional Teachers and Administrators. Because of the source of data from the various states, there is no direct method to develop projections for the number of new teachers and administrators needed in the future. The previous section described several of the major elements that go into determining what the needs are at a given time, and that was followed by a very conservative estimate.

Perhaps the most direct approach is by way of projected enrollments. The first step is to estimate what the enrollment would have to be in a given year in order to assure that training could be provided for everyone in new jobs that year. One projection for the year 1975 is that there will be 19 million enrollees in vocational education in 1975 (Kaufman and Foron, 1972). Of these, 14.1 million will be in public vocational education, 4.3 million in private vocational education, and the remaining 0.25 million in MDTA, Job Corps, and similar type programs. The enrollments and number of teachers needed for each level and type of program, according to this projection, are displayed in Table 8-2. From this, a relative change in vocational teacher needs between the years 1966-75 by level and type of program have been computed. This is displayed in Table 8-3.

Should the need for mid-career changes increase sharply beyond that predicted here, further vocational program enrollments will be generated. Furthermore, the "in-and-out" enrollments of persons seeking to update and upgrade their skills so as to maintain their qualifications in their fast changing specialties may increase. Predictions have been made that adult vocational education services will be utilized by a larger percentage of the civilian labor force by 1975 (Kaufman and Foron, 1972). The need for special needs teachers in vocational education (because of the impact provided by the 1968 Vocational Amendments) will rapidly increase to about 22,000 by 1975.

The projected need for administrators and other ancillary personnel are displayed in Table 8-4. Should the secondary schools move in the direction of developing cluster vocational curriculums, the number of high school youngsters expected to enroll in vocational education will

TABLE 8-2

ENROLLMENTS AND TEACHERS PROJECTED TO 1975 BY LEVEL AND TYPE OF PROGRAM: PUBLIC AND PRIVATE VOCATIONAL EDUCATION (a)

Level and type of program	Enrollments	Teachers[1]
All Programs	19,170,000	418,300
Secondary	9,300,000	173,300
Postsecondary	2,620,000	113,900
Adult	7,250,000	161,100
Trades and Industry	4,474,000	148,300
Secondary	1,206,000	37,900
Postsecondary	644,000	30,900
Adult	2,624,000	79,500
Office	4,973,000	104,700
Secondary	3,050,000	58,600
Postsecondary	974,000	28,600
Adult	949,000	17,500
Distributive	1,469,000	27,900
Secondary	372,000	7,000
Postsecondary	89,000	2,600
Adult	1,008,000	18,300
Health	297,000	19,200
Secondary	37,000	1,600
Postsecondary	246,000	17,000
Adult	14,000	600
Home Economics	5,817,000	81,900
Secondary	4,005,000	56,900
Postsecondary	13,000	300
Adult	1,799,000	24,700
Technical	1,245,000	54,400
Secondary	130,000	4,500
Postsecondary	649,000	34,400
Adult	466,000	15,500
Agriculture	896,000	11,900
Secondary	500,000	6,800
Postsecondary	6,000	100
Adult	390,000	5,000

[1] These projections are based on previously published data.

(a) Rupert, N. E. and Terry, D. R., Vocational Teacher Education. Project No. PDT-AO-030 (TEVOTEC).

TABLE 8-3

RELATIVE CHANGE IN VOCATIONAL TEACHER NEEDS 1966-1975
(DIVIDED BY THE MEAN RELATIVE CHANGE[a])

Vocational Education Classification	Standardized Relative Change
All Programs	
Secondary	0.8
Postsecondary	2.1
Adult	0.9
Trades and Industry	1.3
Office	1.7
Distributive	1.3
Health	2.0
Home Economics	1.0
Technical	2.6
Agriculture	0.005

SOURCE: 1966 data from Digest of Educational Statistics, 1968, U.S. Office of Education (Washington: 1968), p. 35. 1975 data from Table 10, The Education Professions, 1969-70, U.S. Office of Education (Washington: 1970), p. 20.

[a]SOURCE: Rupert, N. E. and Terry, D. R. Vocational Teacher Education. Project No. PDT-A0-030 (TEVOTEC).

TABLE 8-4

ACTUAL AND PROJECTED NUMBERS OF ANCILLARY PERSONNEL: 1966 AND 1975[a]

Personnel	1966	1975
State Level		
Directors or supervisors	378	860
Assistant directors or supervisors	420	1,080
Area supervisors	257	1,230
Youth specialists	32	240
Teacher trainers	160	150
Itinerant teachers	182	400
Research specialists	59	150
Guidance specialists	46	150
Curriculum specialists	79	150
Other	125	320
Teacher trainers (institutions)	2,145	5,666
Local Level		
Directors or supervisors	3,080	9,530
Guidance specialists	1,009	1,980
Curriculum specialists	123	320
Other	317	740
TOTAL		22,856

SOURCE: For 1966, Vocational and Technical Education, Annual Report, 1966, U.S. Department of Health, Education, and Welfare (Washington, 1968), p. 54. See notes at the end of the chapter for derivation on 1975 figures.

[a]Rupert, N. E. and Terry, D. R. Vocational Teacher Education, Project No. PDT-A0-030 (TEVOTEC).

increase to 65 percent of the total enrollment, according to one estimate (Kaufman and Foron, 1972). This projection, by program and curriculum, along with the number of vocational teachers needed for them, are displayed in Table 8-5. The availability of cluster curriculums in the secondary schools is expected to increase the number of secondary vocational program graduates who enroll in post-secondary vocational programs thereby generating an increased need for teachers in that area.

The total supply of vocational teachers, ancillary personnel and administrators is not known. The same dilemma is encountered in adult education. Only the supply of secondary school vocational teachers are known. These are depicted for the year 1968 in Table 8-6. A no growth rate would result in a total of 20,000 teachers for 1975, according to these estimates, but the present expected rate of growth will produce 26,500 graduates in 1975. However, only 62 percent of past graduates entered the teaching profession, reducing the total number who actually enter teaching to about 15,500.

Estimates of replacement needs and teachers entering vocational education for 1975 at each level are displayed in Table 8-7. The difference between the two estimates (replacement needs-new teachers prepared) provides the number of new teachers needed in 1975.

Of interest is that much of the shortage can be reduced by finding means of inducing all graduates of vocational teacher programs to accept teaching or administrative positions in vocational education. But even if this is successful, some expanded vocational teacher education efforts will be needed to fill the vacancies at the post-secondary and adult categories.

TABLE 8-5

PROJECTED VOCATIONAL ENROLLMENTS AND TEACHER NEEDS IN PUBLIC SECONDARY SCHOOLS IN 1975 ASSUMING CLUSTER CURRICULUMS[a]

Program	Enrollments			Teachers
	Occupational curriculum	Cluster curriculums	Total	
Trades and Industry	184,000	1,114,000	1,298,000	39,300
Office	477,000	2,623,000	3,100,000	57,400
Distributive	59,000	322,000	381,000	6,900
Health	6,000	32,000	38,000	1,700
Home Economics	660,000	3,588,000	4,248,000	58,200
Technical	30,000	109,000	139,000	4,600
Agriculture	94,000	517,000	611,000	7,900
Total	1,510,000	8,305,000	9,815,000	176,000

SOURCE: Total projection of 1,510,000 from Projections of Educational Statistics to 1976-77, U.S. Office of Education, 1967, p. 9. Other figures derived.

[a]Rupert, N. E. and Terry, D. R. Vocational Teacher Education. Project No. PDT-AC-030 (TEVOTEC).

TABLE 8-6

VOCATIONAL EDUCATION SECONDARY SCHOOL TEACHER SUPPLY
(NUMBER PREPARED IN 1968[a])

Program	Teacher supply	Percent entering teaching	Number entering teaching
Agriculture	2,047	57.2	1,171
Business	9,001	63.5	5,716
Distributive	475	51.6	245
Home Economics	6,780	63.4	4,299
Health	1,017	67.6	687
Technical and T&I	609	44.2	269
Total	19,929	62.2	12,387
With 33% growth	26,500		16,500

SOURCE: Teacher Supply and Demand in Public Schools, 1968, Research Division, National Education Association, 1969, p. 25.

[a]Rupert, N. E. and Terry, D. R. Vocational Teacher Education. Project No. PDT-A0-030 (TEVOTEC).

TABLE 8-7

ANNUAL NEED FOR VOCATIONAL EDUCATION TEACHERS IN 1975[a]

Level	Replacement need (1)	Teachers reentering (2)	(1-2)	Expansion needs	Total new needs
Secondary	14,900	5,200	9,700	12,100	21,800
Postsecondary	4,000		4,000	8,000	12,000
Adult	6,600	2,300	4,300	5,600	9,900

SOURCE: Derived from Teacher Supply and Demand in Public Schools, 1968, Research Division, National Education Association, 1969, and Tomorrow's Manpower Needs, U.S. Department of Labor, Bureau of Labor Statistics, Vol. I, February 1969. See end of chapter for explanation.

[a]Rupert, N. E. and Terry, D. R. Vocational Teacher Education. Project No. PDT-A0-030 (TEVOTEC).

Some Background Information: Pennsylvania

Vocational programs in the Commonwealth are found in 516 comprehensive high schools, 72 AVTS schools, 19 Commonwealth Campuses of The Pennsylvania State University, 15 public community colleges, 13 private junior colleges, 39 associate degree granting proprietary institutions, 222 licensed private business schools, 126 private trade schools, and 18 penal institutions. Table 8-8 displays the number of vocational programs, the number of students enrolled in each type of institution, and the number of faculty served by them at this time.

It is important to point out that this is the present state of vocational education in Pennsylvania regarding enrollments and the estimated number of vocational teachers. Will there be more, the same, or fewer people in need of vocational education in the future? The

TABLE 8-8

NUMBER OF VOCATIONAL STUDENTS ENROLLED IN EACH TYPE OF INSTITUTION (PENNSYLVANIA)[a]

1	2	3	4	5	6
Comprehensive H.S. (516) and AVTS (72)	588	84,537 (in gainful voc. prog.) 64,925	5,468	274	27/1
Community College	14	13,594	1,250	63	11/1
Private Jr. College	4	276*	16	1	17/1
P.S.U. Campuses	19	2,592	194	10	13/1
Proprietary (Assoc. Degree)	39	7,761	540	39**	14/1
Proprietary (Business / Technical)	175 / 112	26,000	740	287**	35/1
Penal Institutions (Industries Div.)	7	1,300	100 (tradesmen/ instructors)	7**	13/1
(Voc. Ed. Div.)	8	980			

[a]These figures are based on telephone interviews with selected educational officials in the Pennsylvania Department of Education in October, 1973.

[b]Based on a ratio of 20 faculty to 1 non teaching professional vocational educator.

*1972

**A ratio of one per institution was used, since the 20/1 faculty to administrator ratio would result in fewer than one administration per institution.

1 = Institutional Type
2 = Number of Institutions Having Vocational Programs
3 = (1973) Number of Students (full-time)
4 = Number of Faculty (full-time)
5 = Number of Administrators[b]
6 = Student/Teacher Ratio

response to this very fundamental question will point to the number of new vocational teachers needed for the next 10 years. This, of course, is based upon the development of several assumptions from which estimates of future needs will be made in this paper.

The Secondary School Scene. The 1973 secondary school enrollment total was 1,145,195 (The Calculator, 1973). The number of students enrolled in vocational programs in the comprehensive high schools and area vocational technical schools in 1973 was 149,464. Therefore, just over 13 percent of the public secondary school students in the Commonwealth were enrolled in vocational education programs. It should be noted that this compares favorably with the projected 1973 public secondary school vocational program enrollment of 148,043, as displayed in Table 8-9.

But the projected percentage of secondary students enrolled in vocational programs fall far below the national estimates cited in the preceding section (65 percent of total secondary school enrollment). As shown in Table 8-9, the projections for 1978-79 show only 15.5 percent of all secondary school students enrolled in vocational curricula based on the projected total enrollments for that year (see Table 8-10). This also falls considerably short of the recommendations made by the State Advisory Commiteee on Vocational Education, which stated that the percentage of secondary school students enrolled in vocational programs should increase to 50 percent in the 1970's. The same recommendation was extended to post-secondary students and adults served by vocational-technical programs of all kinds.

Of considerable importance in this analysis is the predicted downturn in the total secondary enrollment in Pennsylvania beginning in 1974 (see Table 8-10) as opposed to no discernible national downturn for this

TABLE 8-9[a]

PROJECTIONS OF PENNSYLVANIA VOCATIONAL ENROLLMENTS

Level	1973-74	1974-75	1978-79
Secondary	148,043	153,391	165,155
Post-secondary	42,480	44,604	52,009
Adult	57,342	60,209	72,250

[a]Extracted from the 1974 Pennsylvania State Plan for Vocational Education (Part II, p. 94, Table 4). Harrisburg, PA.: Pennsylvania Department of Education, 1973.

TABLE 8-10[a]

PROJECT: TOTAL PENNSYLVANIA SECONDARY SCHOOL ENROLLMENT

Year	1973	1974	1975
Total	1,267,700	1,260,600	1,243,400
Public	1,152,000	1,150,500	1,139,400
Non-Public	115,700	110,100	104,000

Year	1976	1977	1978
Total	1,221,400	1,191,300	1,154,200
Public	1,113,500	1,047,900	1,064,600
Non-Public	97,900	93,400	89,800

[a]Extracted from Projections: Selected Educational Statistics for Pennsylvania to 1982-83, 1973. Division of Education Statistics, Pennsylvania Department of Education.

population group until 1980 and thereafter (see Lerner, 1970). The projected total secondary enrollments are displayed in Table 8-10.

If vocational enrollment projections cited in the 1974 Pennsylvania State Plan for Vocational Education (see Table 8-9) are held to, and if the projected number of vocational education personnel prepared by the colleges and universities materialize, then the excesses and deficits displayed in Table 8-11 are predicted.

Of interest in this discussion is an assessment of the effect of increased vocational enrollments as recommended by the State Advisory Council on Vocational Education. Table 8-12 presents secondary school vocational enrollments for each year until 1978 based upon several vocational/total secondary school population ratios.

The Thirteen Percent Rate. If the present rate of 13 percent (of all high school students enrolled in vocational curricula) is maintained, then public secondary vocational school enrollments will slowly decrease from around 150,000 in 1973 to about 138,000 in 1978. Should that be the actual experience, then the total number of vocational professionals needed in the Commonwealth will also decrease. Assuming an annual replacement rate of five percent and a continuation of the 27/1 student/teacher ratio (see Table 8-8), then 277 new secondary vocational teachers will be needed for 1973. Also, assuming a ratio of 20 faculty to one non-teaching professional, the number of replacement administrative ancillary personnel will be about 14 in 1973. These same computations have been made for each year from 1973 through 1978, using the projected total secondary school enrollments (from Table 8-12) as a basis to determine the vocational program enrollments (13 percent of the total in each of these years). These are displayed in Table 8-13.

TABLE 8-11[a]

PROJECTED NUMBER OF PENNSYLVANIA
VOCATIONAL PERSONNEL: EXCESS AND DEFICITS

Year	Institutional Category	Excess	Deficit
1974-75	SEC	668	
	PS		136
	A		121
1975-76	SEC	427	
	PS		108
	A		95
1976-77	SEC	584	
	PS		100
	A		90

[a]Extracted from 1974 Pennsylvania State Plan for Vocational Education, op. cit.

The Twenty Percent Ratio (see Table 8-14). Should this ratio be accepted as goal by the State, the overall enrollments in vocational education would be as displayed for Rate A in Table 8-12, and there would be an immediate need for about 3,000 additional vocational teachers (8,522 minus 5,537). This represents an absolute increase of 54 percent in the total number of vocational teachers needed, and it is unlikely that the teacher training institutions in the Commonwealth can produce vocational faculty in such quantity in less than several years. In 1971, for example, the total number of vocational teachers prepared by the various teacher training institutions in the Commonwealth totaled 993 (see Table 8-17).

TABLE 8-12

PROJECTED PENNSYLVANIA SECONDARY
VOCATIONAL PROGRAM ENROLLMENT

Year	Present Rate 13%*	Rate A 20%*	Rate B 30%*	Rate C 50%*
1973				
total	164,801	233,540	380,310	633,850
public	149,760	230,100	345,600	576,000
non-public	15,041	23,140	34,710	57,850
1974				
total	163,800	252,120	378,180	630,300
public	149,565	230,100	345,150	575,250
non-public	14,313	22,020	33,030	55,050
1975				
total	161,642	248,680	373,020	621,700
public	148,122	227,880	341,820	569,700
non-public	13,520	20,800	31,200	52,000
1976				
total	158,782	244,280	366,420	610,700
public	144,755	227,700	333,900	556,750
non-public	12,727	19,580	29,370	48,950
1977				
total	154,869	238,260	357,390	595,650
public	142,727	219,580	329,100	548,500
non-public	12,142	18,680	28,020	46,700
1978				
total	150,046	230,840	346,260	577,100
public	138,372	212,880	319,200	532,200
non-public	11,674	17,960	26,940	44,900

*Percent or total secondary school enrollment

TABLE 8-13

PROJECTED PENNSYLVANIA PUBLIC SECONDARY VOCATIONAL TEACHER AND NON-TEACHING PROFESSIONAL REPLACEMENT[a]: VOCATIONAL STUDENTS = 13% OF TOTAL SECONDARY STUDENTS

Year	Total Teachers[b]	New Teachers[a]	New Administration[c]
1973	5537	277	14
1974	5537	277	14
1975	5485	274	14
1976	5400	270	14
1977	5323	266	13
1978	5125	256	13

[a]Replacements based on a 5% turnover rate of teachers and administrators.

[b]Based on a 27/1 student ratio of the projected number of vocational students for that year (from Table 8-12).

[c]Based on a 20/1 teacher/administrator ratio of the calculated number of new vocational teachers.

The Thirty Percent and Fifty Percent Ratios (see Table 8-15 and 8-16). Increasing the percentage of secondary school students enrolled in vocational programs to 30 or 50 percent would produce overall enrollment totals shown for ratios B and C in Table 8-12. An even greater demand for additional vocational teachers and administrators would be created by such an increase. The magnitude of the increase is displayed in Table 8-15 for the 30 percent ratio and Table 8-16 for the 50 percent ratio.

TABLE 8-14

PROJECTED PUBLIC SECONDARY VOCATIONAL TEACHER AND NON-TEACHING PROFESSIONAL REPLACEMENT[a]: VOCATIONAL STUDENTS = 20% OF TOTAL SECONDARY ENROLLMENT

Year	Total Teachers[b]	New Teachers[a]	New Administration[c]
1973	8522*	426	21
1974	8522	426	21
1975	8440	422	21
1976	8434	421	21
1977	8133	407	20
1978	7884	394	20

[a]Replacements based on a 5% turnover rate of teachers and administrators.

[b]Based on a 27/1 student ratio of the projected number of vocational students for that year (from Table 8-12).

[c]Based on a 20/1 teacher/administrator ratio of the calculated number of new vocational teachers.

*This represents an initial increase of 3,000 new faculty.

The Post-Secondary Scene. Full-time post-high school vocational students are found in the public community colleges, private junior colleges, PSU Commonwealth Campuses, and certain proprietary schools. The vocational program enrollments for these institutions are shown in Table 8-8. The total post-secondary vocational enrollments in 1973 was just over 24,000. Nationally, about 1.05 percent of the population is enrolled in two-year colleges, of which about four-tenths are in vocational curricula. If Pennsylvania were to mirror this enrollment, there would be about 120,000 full-time, two-year college students and 48,000

TABLE 8-15

PROJECTED PUBLIC SECONDARY VOCATIONAL TEACHER AND NON-TEACHING PROFESSIONAL REPLACEMENT[a]: VOCATIONAL STUDENTS = 30% OF TOTAL SECONDARY STUDENTS

Year	Total Teachers[b]	New Teachers[a]	New Administration[c]
1973	12,800	644	32
1974	12,783	639	32
1975	12,660	633	32
1976	12,367	618	31
1977	12,189	609	30
1978	11,822	591	30

[a]Replacements based on a 5% turnover rate of teachers and administrators.

[b]Based on a 27/1 student ratio of the projected number of vocational students for that year (from Table 8-12).

[c]Based on a 20/1 teacher/administrator ratio of the calculated number of new vocational teachers.

of them would be in vocational curricula. Therefore, Pennsylvania falls considerably short of the national average for vocational students in two-year colleges. In addition, the Commonwealth has a proportionally lower number of secondary students in vocational programs (13 percent as compared to a 1970 national average of 17 percent) and also falls far behind in its post-secondary vocational curricula enrollments.

The number of additional teachers needed for these institutions is not large. For example, the enrollment increases are not expected to be substantial, resulting in the hiring of very few new faculty and administrators. Using the five percent turnover rate referred to earlier,

TABLE 8-16

PROJECTED PUBLIC SECONDARY VOCATIONAL TEACHER AND NON-TEACHING PROFESSIONAL REPLACEMENT[a]: VOCATIONAL STUDENTS = 50% OF TOTAL SECONDARY STUDENTS

Year	Total Teachers[b]	New Teachers[a]	New Administration[c]
1973	21,333	1067	53
1974	21,306	1065	53
1975	21,100	1055	53
1976	20,620	1031	52
1977	20,315	1016	51
1978	19,711	986	49

[a]Replacements based on a 5% turnover rate of teachers and administrators.

[b]Based on a 27/1 student ratio of the projected number of vocational students for that year (from Table 8-12).

[c]Based on a 20/1 teacher/administrator ratio of the calculated number of new vocational teachers.

the additional faculty required for 1974 would be 65 vocational teachers and three administrators for the community colleges, 10 faculty and one or no administrators for the Commonwealth Campuses, and 27 teachers and two administrators for associate degree proprietary schools. This adds up to an addition of 102 teachers and six administrators for the entire post-secondary vocational effort. But, these figures represent the need related to full-time day student enrollments with no consideration given to the adult continuing education components conducted by these institutions. The community colleges, with about 11,500 part-time students, many of whom are enrolled in vocational courses, are likely structured

TABLE 8-17

VOCATIONAL TEACHERS PREPARED FOR
THE FIVE YEARS, 66-67 THROUGH 70-71*

Vocational Area	66-67	67-68	68-69	69-70	70-71
Agriculture	24	22	19	24	24
Business Education	373	407	448	498	431
Distributive Education	12	30	23	4	37
Home Economics	314	379	411	475	478
Trade, Industrial, Vocational, Technical	1	10	27	60	23

*Extracted from Our Colleges and Universities Today, Vol. VIII, No. 5, Pennsylvania Department of Education, 1971.

NOTE: 1970-71 graduates:

Agricultural Education: All teaching;
Business Education: 221 teaching (193 in-state), 210 not teaching;
Distributive Education: 9 teaching, 28 not teaching;
Home Economics: 249 teaching (193 in-state), 229 not teaching;
Trade, Industrial, Vocational, Technical: 12 teaching (in-state), 11 not teaching.

to have faculty and administrators earmarked for this special kind of vocational education. Since these students are probably enrolled on a half and one-fourth time basis, a student/teacher ratio of 50/1 would be more likely (although no official figures are available). Should this be accurate, then about 230 adult/continuing education faculty in the community colleges are employed for this effort, with an annual replacement need (assuming a five percent turnover) of up to 13 new teachers and one administrator.

An assessment of the need for the preparation of post-secondary vocational teachers is complicated by the fact that many of them are not graduates of vocational teacher education programs. For example, the great majority of vocational faculty in the PSU Commonwealth Campuses have one or two degrees in the area in which they are teaching (such as engineering). The same is true of many vocational faculty in the community colleges. There is some question as to whether the employment officials of these institutions would want to change from their present source of teachers.

Another situation exists with regard to the proprietary schools in that up to this time their faculty and administrator salaries are not sufficiently attractive to draw many graduates of vocational teacher education programs to them. Furthermore, as the financial condition of these institutions becomes increasingly more difficult, and two-year college faculties push further ahead in the salary area via more sophisticated forms of negotiations, it is highly unlikely that the proprietary schools will ever become a viable market for graduates of vocational teacher education programs (unless huge surpluses are generated). The post-secondary level, as a whole, from this writer's point of view, is not presently and will not in the future be a large market for the vocational teacher education programs.

Another market offered by the post-secondary schools (at least the public supported ones) is for administrators, coordinators, curriculum specialists, and institutional researchers. But this is also limited in that such specialists are not needed in great abundance, perhaps not more than an average of one to each such institution over a five-year period.

In conclusion, the post-secondary vocational areas are not and will not be a major market for vocational teacher education in Pennsylvania. A major function of the university-based vocational teacher education programs should relate to research in post-secondary vocational schools that would improve the quality of teaching, curricula, and learning in the vocational programs, as discussed in the following section of this paper.

Adult-Continuing Education. The major growth in vocational program enrollments in the Commonwealth could be in the adult-continuing education arena. Pennsylvania is expected to have a labor force of just over five million in 1975 (Pennsylvania D.L.I., 1969). It can be assumed that about 80 percent of these jobs will be below the professional (i.e., requiring a baccalaureate degree for job entry) level. Should five percent of the sub-professional group (about four million) seek some kind of upgrading, updating, or recycling each year, then the vocational schools of the Commonwealth could be deluged with 200,000 adult students annually (if they all sought such training in these institutions). As the concept of mid-career change becomes more widely accepted, such a surge toward additional vocational preparation will become a realistic expectation. The preparation of teachers for this special clientele requires more than the traditional vocational teacher training approach and offers a rich opportunity for the university based vocational teacher educators to adopt innovative approaches to the situation.

The Role of Research, Graduate Studies, Undergraduate Studies, and Field Services

The conduct of research is one of four major objectives of vocational teacher education. Research associated with vocational teacher

education ought to be directed toward several broad objectives, including the following:

1. The improvement of curriculum and instruction through systematic study of its processes and its outcomes;
2. Improvement of pre-service and in-service programs for vocational teachers and professional personnel in the field;
3. To further knowledge and means to prepare youth and adults for employment;
4. To seek solutions of problems related to vocational education in the field;
5. To test and further refine the frameworks which make up the foundations upon which vocational education is based;
6. To seek solutions to vocational education problems that are of particular concern to a school or school district.

In order to provide a stable and continuing research thrust, university departments of vocational teacher education should employ a number of professors on a joint research-teaching type of responsibility. Such arrangements, in addition to insuring that vocational education related research will be conducted, will also provide a mechanism for maintaining an up-to-date and realistic vocational teacher training program.

The graduate program in vocational teacher education should have five major goals, which are briefly described here.

1. The preparation of leaders. The teaching of the principles and practice in skills within the broad areas of administration and supervision of vocational education could provide knowledge and training needed by leaders in the field of vocational education. The

identification and refinement of knowledge and skills related to vocational education leadership can be improved by research and field service activities. The best preparation for leaders would be one in which there is a judicious blend of theoretical constructs and practical knowhow.

2. Preparation of teacher educators. Although the number of additional vocational teacher educators needed is likely to remain small, there will be vacancies created by normal turnover. Therefore, a limited number of the doctoral graduates will likely find employment as vocational teacher educators. Provisions for this possibility should be made within the vocational doctoral programs.

3. Preparation of vocational education researchers. This goal is achieved by the provision of three kinds of experiences for graduate students: (a) selected course work; (b) research internship; and (c) thesis and paper writing experiences. Vocational education researchers, if they are to perform in an optimum manner, should be well trained in research methodology; but of equal importance, should also be well versed in the overall area of vocational education.

4. Preparation of vocational teachers. A projected need for vocational teachers, based on several statewide ratios (of students enrolled in vocational programs compared to total enrollments) is presented in an earlier paragraph. Because of the uncertainty of what the actual ratio will be in the next decade, the real need for vocational teachers and leaders is impossible to determine. This problem is made more complex by the fact that vocational teachers are being prepared in 39 programs found in a total of 26 colleges (18 private, five state owned, and the three commonwealth universities). These programs consist of: home economics (14), business education (18), distributive

education (3), trade and industrial (3), and agricultural education (1). An evaluation of actual market need may indicate the involvement of too many programs in some of the vocational areas cited above and also may indicate the involvement of too many colleges. Considering the projections displayed in the preceding section, there are reasons to suspect the presence of excessive proliferation in at least several of the areas listed above.

An important part of preparing vocational teachers has to do with in-service training, which is concerned with several broad needs. First, increased attention is needed to maintain up-to-date teacher expertise in their vocational specialities. While several types of strategies have been employed in such attempts in the past, an effective method for achieving this desirable objective is still not available. Needed is a serious (i.e., financially supported) effort to design, test, and continuously refine vocational teacher modernization models--another vital role for vocational education researchers. Secondly, and of comparatively less importance, is the need to elevate all vocational educators to the baccalaureate degree level in their own professional preparation. The present mode of certification in some of the vocational areas provides the teacher with the security of permanent certification quite apart from acquiring the bachelor's degree. Heavy emphasis is placed on related work experiences and the acquisition of certification related courses is permitted in such a manner that, should the vocational teacher so elect, he (or she) may be free to discontinue all studies upon receipt of permanent certification. While this mode of certification exists, it may be very difficult to motivate such individuals to continue their professional studies up to at least a baccalaureate level.

Evidence of this is the present condition whereby the majority of the AVTS faculty in the Commonwealth do not hold bachelor degrees. A statewide endorsement of a minimum educational requirement for vocational teachers (i.e., at least a bachelor's degree) at the time of employment (with an appropriate deadline for those presently employed) would quickly remedy this unfortunate situation which contributes to the low prestige accorded vocational programs in education (particularly secondary schools). Such a move can be urged, however, only when a good case can be made in that adding the baccalaureate degree requirement will result in vocational teachers, who in turn will be more successful in helping vocational graduates cope with their roles in the world of work. This requires careful analysis, from which an undergraduate vocational teacher training programs would be modeled. This also is a research and development task best done within the rubric of university based vocational education research. Although the major part of the actual undergraduate work may go on in the four-year colleges, this writer believes the research and development aspect is a role best assumed by the university.

5. Certification of vocational teachers, supervisors, and administrators. Historically, the basic rationale for certification of public school teachers, supervisors and administrators was to insure professional competency. There has been considerable thought devoted to the advantages and weaknesses of certification. The most recent trend, which to this writer appears to be a "fad," is competency based certification. While the basic idea is a good one, the danger lies in selection of the skills and knowledges to be assessed. Vocational education, with one of its major underpinnings being the teaching of skills

and provision of knowledge associated with a vocational speciality, at first glance appears to lend itself to easy-to-measure type objectives. However, the most important components of vocational education in fact deal with matters of the mind, such as attitudes toward learning new work skills and techniques with a minimum of resistance. A major incursion of "competency-based" certification in vocational education, in the opinion of this writer, will encrust certain skills and areas of knowledge into the fabric of vocational teacher education in such a manner that the profession would be deprived of much of its present flexibility. The preparation of professionals for vocational education ought to be sufficiently pragmatic to provide for optimum development of each individual teacher and administrator. The competency-based idea works the other way around; all who aspire to enter the profession must achieve a minimum level in a series of competencies, regardless of the unique contributions each of these individuals can bring to the profession (Gillie, 1974a).

With regard to the above, vocational teacher educators have the responsibility to meet the competency based trend head on, by extracting the worthwhile aspects of it for incorporation in their programs while resisting its more shortsighted components.

Conclusion

The public and private school enrollments in vocational education are likely to remain at or near their present levels in the next five years. The most significant increase may be experienced in adult-continuing education as older workers in the Commonwealth seek to upgrade or update their present work skills and knowledges, or seek preparation for a mid-career change. Should this variety of vocational

education take hold, a new breed of vocational teachers will be needed. Such teachers will require considerable expertise in providing instruction for persons who have been out of school for years and seek assistance in meeting specific career goals. Furthermore, such teachers ought to be strongly empathic to this type of student and their special vocational needs. Present vocational teacher training programs do not prepare professionals with such an orientation, and a graduate program would be required to do the job.

The major effort of vocational teacher education in the university, in the opinion of this writer, should be in the area of research and graduate studies, which in turn serves the needs of undergraduate students and field services. Research into the six areas listed in a previous paragraph, aimed ultimately at providing better vocational education to the Commonwealth is of continuing importance, because without such efforts the profession cannot remain viable and progressive. Graduate studies, with primary concentration on the five areas stated in a preceding paragraph, is of equal importance to the long-term health of vocational education in this state.

This paper would be avoiding the heart of the issue without the following caveat: The financing of vocational teacher education by the state universities is the key to its future. There is a clearly discernible trend in the nation for a reduction and gradual elimination of direct external financial support for university vocational teacher education (i e., via the State Department of Education). The move presently afoot in the Commonwealth of Pennsylvania, in the opinion of this writer, is merely in harmony with that trend. Should this attempt by State Departments of Education throughout the nation to extricate

themselves from direct funding for vocational teacher education be stopped or slowed, this observer believes the issue will only re-emerge next year or in a very few years at most.

Furthermore, this writer believes that the original intention of direct federal-state funding via the State Departments of Education for Vocational Teacher Education was to be a temporary inducement for universities and state colleges to invest a portion of their intellectual resources and expertise to the matter of preparing teachers and leaders for vocational curricula and schools. As time went on however, these institutions became accustomed to the idea of obtaining the bulk of the funding for this effort from outside their legislated budgets. This author believes there was an intention, probably lost during the many years that this mode of financing was made available, for these colleges and universities to gradually increase their share of financial support for the vocational teacher education effort until they would assume all or most of it. And now the issue is raised, unfortunately, during a time when colleges and universities already are faced with the prospect of no growth or even reduced budgets.

Should the colleges and universities succeed in delaying the cessation of direct funding for vocational teacher education, then additional time will have been gained to deal with the problem. Otherwise, they will have a period of several years in which they can: a) completely phase out vocational teacher education; b) gradually assume some of the financial support being lost over the next several years so that vocational teacher education efforts will continue at a reduced rate; c) full assumption of financial support on a gradual basis

during the next several years so that vocational teacher education efforts will continue at the present rate during the transition.

This writer believes it is vital that the graduate studies and research efforts, although possibly reduced significantly in magnitude, be continued by the state universities. Much of the undergraduate studies in vocational teacher education, with sufficient time provided for the transition, can be conducted at the state owned colleges, although this writer feels at least a portion of that effort should be retained by the large universities. Selected field services can be negotiated by the universities on a contract basis with their respective State Departments of Education. This would place the field services in the "soft money" category, to be re-negotiated each year, resulting in such efforts concentrating on the more immediate type needs in the field.

This paper has one major purpose: to provide additional rationale for continuing vocational teacher education in the state universities under the auspices of complete university funding, should this be required in the future. The writer hopes a sufficient case has been made for university decision makers to consider Option C or, at worst, Option B above.

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D. Some General Considerations

9. EMPLOYING THE CHRONICALLY UNEMPLOYED*

Early Concerns About Unemployment

As the nation's economy shifted away from agriculture and toward manufacturing, the migration rate from small farms, little towns and villages into industrially oriented cities increased in tempo. Back in the rural areas, the jobless quietly suffered through the concomitant distresses of unemployment in out-of-the-way places where only their relatives and friends were cognizant of their dilemma. In this way, the specter of joblessness was tucked away from public view. Individuals possessing no job skills or only low level type occupational training, were the first to be displaced as substitution of people with modern mechanization practices gained impetus in agriculture and industry. Many of those victimized by this, in a manner not unlike refugees ousted by a natural calamity, chose to relocate themselves and their families in an urban center, in the hope of finding employment and a "decent living." Ironically, the lack of skills and training that displaced or barred them from employment back home also proved to be an obstacle in their new environs. There was an important anomaly in all this, one that fostered a psychologically devastating feeling of rootlessness: these migrants no longer could retreat to a small plot of land to gain reinforcement of the need to "belong." This was aggravated by having no relatives or friends of long standing to turn to for solace. Having no resources or support of any kind, their only recourse was to seek assistance from governmental agencies. The actual magnitude of employment displacement caused by so called advances in technology came to the

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*Extracted from classroom lectures, October 1974.

public's attention like a colossus out of "nowhere." Migration of many chronically unemployed to the cities heralded the onset of forced public responsibility toward them, and was the harbinger of a growing concern about unemployment.

Past Attempts at Employing the Unemployed

There were several reactions to the unemployment dilemma, none of them particularly imaginative or humanistic. One consisted of a number of schemes for quickly training the unfortunate ones in a scurry to get them off the welfare rolls, into the labor force, and off the public's conscience. Such efforts, motivated primarily be economics, were lacking in humanistic intentions and were reflected in the generally unsatisfactory results obtained. A second broad reaction was design of a system for providing subsistence payments, which was both complicated and humanly demeaning. These responses were interlaced with a general public feeling of antipathy toward the unemployed and the idea of providing them with subsistence allowances out of public funds. An outcome of all this was dejure, as well as de facto, separation of unemployed fathers from the family scene (in addition to the other demeaning aspects of welfare). Such feelings continue high and resulted in their disenfranchisement from employment in particular and society in general, as one of its ugly byproducts. The number of potential workers in this submerged group in our labor force may be as high as four million. If we add to this group those mothers (some on welfare and some not) who would be willing to enter employment if they could receive suitable training and daycare services for their children, the total may well be in the neighborhood of seven million. The major question is: How can

jobless persons be brought into the mainstream of society and the labor market in a self-satisfying and socially useful manner?

Before responding to the question with a description of a new approach to this dilemma, a brief review of past strategies is in order. Early nationwide attempts to help employ the jobless were made during the great depression years of the 1930's. Those major efforts were in the form of three thrusts, namely: the Works Progress Administration (WPA), the Public Works Administration (PWA), and the Civilian Conservation Corps (CCC). Their major intent was to get people back to work in the interest of bolstering a seriously depressed American economy. It was a movement born out of desperation, as evidenced by the fact that 13 million of the 51 million labor force were out of work at that time. To put it more directly: It was a reaction to an immediate situation of emergency proportions. These efforts were abandoned by the time our economy received its first adrenalin-like effects of World War II defense spending upon the national economy. It is important to keep in mind that these depression employment projects were conceived as reactions to an immediate economic problem, and considerations for the long term benefit of people were not in the scheme of things. Furthermore, there were no serious attempts to match people with occupations that were in harmony with their interests and abilities. In those days, it seemed to be enough to merely have a job, regardless of the individual's propensity toward it.

There has been some federal government interest since World War I, in addition to the public service programs alluded to above, in provision of vocational education and training. This has been reflected in passage of a series of Congressional acts since that time which have provided

funds through the Department of Health, Education and Welfare to the public schools (primarily via state departments of education). The most recent legislation in this sequence is the Vocational Education Amendments of 1968. However, some labor and Congressional leaders during the early 60's felt public school efforts were not sufficiently affecting unemployed persons, and their concerns were translated into the inauguration of additional legislation that provided funds to the Department of Labor (Manpower Development and Training Act of 1962). This legislation was later modified and broadened in attempts to increase its impact upon hard to train-and-employ type persons (the Comprehensive Employment and Training Act of 1973).

The public school system (through the comprehensive secondary schools, area vocational schools, and community-junior colleges), have addressed their vocational and training efforts primarily to adolescents and young adults found in the mainstream of our society. The Department of Labor efforts, expressed through various training strategems and devices, have sought to deal with some of the elements in the chronically unemployed group considered here. The long term effect of these efforts, in the opinion of this writer, have not been successful in any permanent way. Emphasis was frequently placed on the short-term oriented training programs where a quick "pay-off" was hoped for; that is, to get as many of these individuals into the job market as soon as possible. There appears to be relatively little if any long range concern for these persons. This is a reaction to the tendency for Congress and the public to become impatient and disenchanted with public service programs that fail to provide instant solutions for the problems to which they are addressed. Present training efforts for many of these persons fail to

obtain employment for them even after completion of the training, and still many others reappear on the unemployment rolls a short time later. Furthermore, there are many unemployed who have not come under the influence of these efforts at all. It appears, therefore, that the traditional approaches to vocational education and training utilized by the public schools and Department of Labor are inadequate for the task of dealing with individuals in the submerged group of chronically unemployed. It appears to be a classic example of misapplying traditional strategies to a nontraditional problem.

A New Approach

Past failures in finding satisfying and useful work for persons in the chronically unemployed sector of our work force are not manifestations of ineffectivenesses in our present vocational education and training delivery system. The fact is that habitually unemployed individuals are atypical components in the work force, and are best characterized as possessing an array of disadvantages sufficiently severe to exclude them from the mainstream of our labor force. It is ironic that previous responses to this difficulty have resulted in a reduction and narrowing down of opportunities for those who in reality need special help and a wider assortment of services. What has been brought to bear upon this concern up to now, in the opinion of this writer, is use of existing vocational education and training mechanisms; whereas this is really a special socioeconomic problem and such responses are entirely inappropriate. The fact that several million are chronically unemployed at any given point in time (many of whom are the same persons year after year) is ample evidence that something is awry and a new strategy needs to be brought into play.

There are several good reasons why we should search for a solution to the chronic unemployment problem. The first is a humanistic one: modern societies view employment as the major vehicle for acceptance into society. Therefore chronic unemployment has a double barrel effect upon its victims--in addition to being deprived of the means to be economically self-sustaining, they are also shunted out of the mainstream of society at large. The second reason why this problem is worthy of remediation is its effect on the national economy. Chronically unemployed persons require and receive public financial assistance on a habitual basis, which shunts a portion of our gross national product into nonproductive subsistence expenditures. The efficiency of our social system, from an economic point of view, is related to the national rate of employment. This, in turn, has an effect upon the rate of inflation, a contention that is likely supported by some leading economists (i.e., that inflation can be brought to controllable limits only when the efficiency of society is increased). An integral aspect of such increased efficiency is a reduction in the number of chronically unemployed persons. Suggested is that these individuals be gradually employed into the national service. This non-traditional manner of attacking the problem of the chronically unemployed may indeed be the alternative that will reduce the average unemployment rate to less than one percent. Using the national service idea as a basis, a proposed new attack on the problem is suggested here. This approach has not been tried and this writer believes its implementation will make a permanent reduction in the number of chronically unemployed persons.

This new approach incorporates eight major steps. The first of these would be (1) identification of the chronically unemployed, followed

by (2) establishment of a schedule for employing them into the national service. The initial induction period at the onset of the program would require several years so as to allow time for establishment of national service jobs and appropriate training mechanisms. Such employment would resemble civil service in that each individual would immediately begin accruement of fringe benefits and privileges provided for civil service-type employees. But the similarity would end there, because employment into the national service would be based on the fact that these persons have consistently found it difficult or impossible to compete for jobs in the open labor market and have been adjudged to be chronically unemployable. The rationale for classifying them in such a manner is they need to be provided an occupational shelter, perhaps for the remainder of their working lives. At first glance, one would think the arrangement just described would ensure employment for certain persons on the basis of unemployability for some and predicted difficulties in this area for others, which is a reversal of traditional open labor market conditions for the usual worker. This is true to the extent that they would be assured employment first, placed on a job second, and then receive training last. But this strategy is not completely unheard of, as similar arrangements are made in some industries and public services where special consideration of this type is given to selected long time employees in the interest of keeping them on the job. The major difference is that employment in the national service approach would be guaranteed at the onset, and not accrued as a benefit by those with long employment. It would be a "given," built-in initial element.

After guaranteeing these persons employment, the third step (3) would be provision of a professionally conducted service for careful examination, evaluation, and counseling of those entering the national service.

The major purpose behind this quest would be to identify their greatest employment potential with particular regard to individual interests and abilities of each employee. The search-interview-assessment process would be an extensive one for each individual, and would include identification of areas in need of remediation, including those with regard to health (physical and mental). Although the initial cost of such an intensive effort for so many persons would be high, the information derived would be an indispensible component in the manipulation of the public service work environment in the interest of maximizing compatability between individuals and public service jobs. It would represent a long term investment of public funds in these persons, with dividends achieved in terms of happier individuals than presently found in the limbo of the chronically unemployed, and furthermore, would result in a more efficient society.

After compilation of the personal inventory just described, the next step (4) would be connecting each individual with a job found to be the best obtainable match between the employee's abilities and interests and an available public service job opening. This process may be most lengthy for some, particularly those with long histories of joblessness. Actual training for job performance, in this approach, would be withheld until the individual and employer have reached closure on a specific job. Following the establishment of a commitment by both parties, the next step (5) would be identification of the skill components, after which

they are (6) incorporated into the foundation of a training program for that person. This is opposite to the traditional approach to vocational training (i.e., where the person receives training and skill development first, and then goes off in search of a job in which he hopes to utilize his newly acquired skills). Although it is contrary to the usual approach in vocational education and training, it is the most logical strategy, especially for those who are difficult to train and employ, since it reduces the guesswork of job placement and training to a near zero level. The risk of mistraining would be reduced to a few cases, since job selection decisions were made jointly by the employer, employee and a team of professionals during the search-interview-assessment process.

The most unique element in the proposed approach is provision of vocational education and training as one of the final steps in the process, after identifying the skills required for the job accepted by the individual. The next matter for consideration, step (7), is identification and establishment of vehicles for this provision. Several mechanisms would readily lend themselves to the proposed system. On-the-job training, the easiest one to implement, is an appropriate approach for development of low level but very specialized skills that tend to be unique for each kind of job. But even in such cases, the training of the chronically unemployed person should be conducted in accordance with a carefully laid out plan, and not be left to informal "catch-on-to-it-on-your-own" tactics so commonly found in low-skilled occupations. A second strategy would likely be needed for most of these individuals, which entails establishment and operation of a vocational education and training system. The skills identified after connecting the person and

a job would be used in formulating a training program tailored expressly for that person for a particular job at that point in time. Therefore, the National Service employee would be provided a training program designed with him in mind, and it would bring his unique level of expertise in the identified skill areas up to that required for successful work performance. The provision of vocational education and training entails a high initial cost. This is largely due to the considerable amounts of individual assistance needed, because of their proneness to experiencing difficulties in employment related matters (such as skill development and orientation to the work ethic). It is believed such a highly individualized approach to job preparation, literally impossible to provide within the framework of traditional vocational education and training programs, would give hard to train and employ persons the kind of additional help they need in order to enter into successful and long term employment. Viewing this process on an extended basis, the initial heavy cost is like a down payment and would level out over the years since the recipients would enjoy extended periods of employment, which in turn results in long term benefits to society (as well as themselves).

The acquisition of initial jobs for chronically unemployed type persons is only the beginning of the proposed approach (although it is at this point where traditional vocational education and training authorities perceive their tasks as completed). Step (8) which continues for the remainder of the person's work life, is especially critical. It entails continuous contact with, evaluation of, and vigilance over their job activities. Trouble shooting the process and the environment in which it occurs is the essence of this action, in an ongoing and tireless

search to detect early signs of skills obsolescence, employee disinterest and boredom, and other malfunctions in the work environment. Many such difficulties, if identified and diagnosed early, would require only minor remediation. Virtually every one of these workers would be called back into training from time to time, for occupational adjustment or complete retraining purposes. Successful implementation of employee recall would ensure that optimum levels of job performance and worker satisfaction are achieved. Some persons may need to return to training as often as several times in one year, while others may require less frequent occupational adjustments. All this would be offered at no change in income for the worker during the training episodes. Indications are that at least six substantial retraining recalls would be needed during the average person's working life. Subsidization of the transitional training in such a manner would ease the trauma that could be incurred during such change-overs. Its provision in this manner would normalize such activities and eventually be viewed as an ordinary component in the employment career pattern of all workers.

A National Service Education System

Having explained the process by which the chronically unemployed could be brought into the mainstream of society and the work force, the final point to be discussed is the manner in which this can be established. Considering the fact that adults are involved, most of whom have had little or no success in the traditional educational system, and are atypical in many other respects, a new vocational education and training system designed to serve this unique group should be established. It should be a federal education system that would devote itself exclusively

to provision of vocational education and training for those employed into the national service. It would not be our first national system of education however. The Army, Airforce and Navy already have such educational systems to serve their members, and the one proposed here would likewise restrict its services to its own clientele - members of the national service. It would need to be an autonomous system, with no controls emanating from the vocational education or training authorities of the public schools or the Department of Labor. Each of these systems has goals for their own clientele, neither of which includes the entire group of chronically unemployed type persons considered here.

This writer proposes the national service education system be placed within the broad rubric of the Department of Health, Education, and Welfare, but with its own office and not in the Office of Education. The national office would have as its major purpose the exercise of leadership and direction for subsidiary (regional) administrative offices. Schools would be established on a regional basis, which would include one or more labor market areas. Therefore, each urban center would likely comprise a region whereas many relatively unpopulated rural areas would be consolidated into regions serving a sufficiently large population.

It would be the tasks of these education centers to conduct the search-interview-assessment process described earlier. They would also coordinate job placement, identification of skills, and offer the program for provision of these skills. The national service schools would also gear themselves up for provision of the recurring training needed by the national service employees. The schools would be oriented around vocational education and training requirements of these employees, and would not be encumbered by formal curriculums and courses. They would be open

ended in that an employee's program would terminate when his training is completed. The school would be task oriented, thereby necessitating an open type schedule for such matters as admissions and completions. The in-and-out process should be simple and relatively uneventful, since it will be going on all of the time.

Because this mode of vocational training and education differs considerably from previous and present efforts, it is imperative that these schools be independent of the educational groups described previously. It would be a new start in the direction of structuring the lives of persons who otherwise will remain among the dregs of our society and constitute a continuing drain on the economy.

10. PROFESSIONAL WOMEN IN VOCATIONAL EDUCATION*

Introduction

Partially in response to a contemporary interest in the status and roles of professional women in vocational education (as expressed particularly by the AVA resolution suggesting such an inquiry), and in the hope of contributing to the acquisation of knowledge that could be used in improving present conditions relative to this concern, a four-pronged study was conducted. It included scientifically selected samples of administrators and female vocational faculty from community junior colleges, area vocational schools, comprehensive high schools, and post-secondary proprietary schools. Female vocational faculty members with their chief administrators in these institutional types were surveyed with a 25 item questionnaire and a demographic information form.

The study's overall purpose was to identify perceptions of female vocational faculty members relative to their roles, career aspirations, and perceived career possibilities. These were compared with how their administrators perceived them with regard to the same concerns. From these results, similarities and differences between female faculty and their administrators were identified. Also, differences as a function of institutional type were found. The data and information obtained from the instrument, and derived from its analysis, provide a basis for determining several things, i.e.:

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*Presented at the National Adult Education Conference in Miami, Florida on November 6, 1974.

1. Differences within the same institutional type in terms of
   a) role conflicts experienced by female vocational faculty as compared to their role conflict perceived by their chief administrator.
   b) career aspirations that female vocational faculty have in comparison to the career aspirations their chief administrators think they have.
   c) career possibilities of female vocational faculty as perceived by themselves and their administrators.
2. The differences in the three elements above, in perceptions of female vocational faculty, as a function of institutional type.
3. The differences in the three elements above, in perceptions of chief administrators, as a function of institutional type.
4. The differences between female vocational faculty and their administrators, grouped together, as a function of institutional type.
5. Utilization of the results to propose suggestions to vocational faculty and administrators for furtherance of equality of opportunity and promotions for all vocational educators. This would include suggestions for:
   a) reduction of dual role conflict actually suffered by female vocational faculty;
   b) reduction of misperceptions of female vocational faculty dual role conflict that administrators may have;
   c) provision of female vocational faculty with proposals by which they can more assertively pursue advancement in their profession;

d) provision of administrators with an adequate appraisal of how female vocational faculty perceive their career advancement possibilities and proposals for concrete encouragement of female faculty in this matter;

e) provision of a basis to initiate programs for encouragement of female vocational faculty to seek professional advancement;

f) provision of a basis for administrators to directly encourage female vocational faculty to seek professional advancement;

g) provision of a data-information base for state and national vocational leaders for use in promoting greater opportunities for female professionals in vocational education.

The four substudies were conducted at The Pennsylvania State University (in the Department of Vocational Education) with partial funding assistance from the Bureau of Vocational Education of the Pennsylvania Department of Education. The final report for the community college study is complete at this time, and the remaining three will be completed in the next months. This presentation is one of the early reports concerned with the interrelationship of the findings among the female vocational faculty and administrators of the four types of institutions.

Procedures

The sample for each study consisted of the chief administrator and one or more of the female vocational faculty in that institution. Institutions within each category were randomly selected, and the administrator of that school automatically became a part of the sample. That administrator in turn was asked to provide a list of female vocational faculty members in his school (community college presidents were asked

for catalogues from which the names were selected). The female vocational faculty were randomly selected from the finalized list.

The questionnaire consisted of 25 items, 14 of which were addressed to dual-role conflict matters, 5 on career aspirations, and the remaining (6 items) on advancement possibilities. The results of the studies point to several interesting differences and similarities among the faculty of the four types of institutions and also among the administration. I would like to review the more significant results with you.

Results: Agreement

Over 85 percent of the female faculty in each of the four types of institutions agreed with the following six statements. See Table 10-1.

1. It is fine for a woman to work if her children are adequately cared for.
3. Women can live in productive harmony with men filling complementary and supplementary roles.
8. Women have as much need to achieve as men.
11. It is possible to be successful at both marriage and a career.
17. Women who want full equality should be prepared to accept equal responsibility.
22. A coeducational faculty provides a healthy atmosphere.

The administrators were community college presidents, area vocational school directors, comprehensive high school directors of vocational programs, and directors (or presidents) of post-secondary proprietary schools.

Over 85 percent of the administrators in each of the four institutional types agreed with the following six statements: (See Table 10-1)

TABLE 10-1

STATEMENTS AGREED TO BY FEMALE FACULTY AND ADMINISTRATORS

Questions Identifier			Agreed to by Faculty	Agreed to by Administrators
DRC	1.	It is fine for a woman to work if her children are adequately cared for.	X	X
DRC	3.	Women can live in haromony with men filling complementary and supplementary roles.	X	X
CA	4.	Professional women can realistically expect to have a life-long career.	–	X
CA	8.	Women have as much need to achieve as men.	X	X
CRC	11.	It is possible to be successful at both marriage and a career	X	–
DRC	17.	Women who want full equality should be prepared to accept equal responsibility.	X	X
DRC	22.	A coeducational faculty provides a healthy atmosphere.	X	X

DRC = Dual Role Conflict

CA = Career Aspiration

CP = Career Perceptions

1. It is fine for a woman to work if her children are adequately cared for.
3. Women can live in harmony with men filling complementary and supplementary roles.
4. Professional women can realistically expect to have a life-long career.
8. Women have as much need to achieve as men.
17. Women who want full equality should be prepared to accept equal responsibility.
22. A coeducational faculty provides a healthy atmosphere.

From Table 10-1, it is seen that female vocational faculty and administrators from each of the four types of institutions agreed with five statements. The administrators agreed on a sixth one, which was different from the sixth one concurred to by the faculty respondents. Of interest is that five of these were dual role conflict items, two were career aspiration items, and none were career perception questions.

Areas of Disagreement

Eight statements in which fewer than half (50 percent) of the female faculty agreed, which can be interpreted as a high rate of disagreement, included the following: (see Table 10-2)

7. Marriage is an asset for professional women.
9. For professional women children are an asset.
12. A woman's professional career should be subservient to her husband's.
14. Most women would like to be promoted to an administrative position.

15. A woman's first responsibility is to be a feminine companion of men and a mother.
21. Women in supervisory positions have difficulty dealing with males in subordinate positions.
23. Career women play down feminine appearances in order to be taken seriously.
24. Most women would like to end their educational careers as (full professor, high school teachers, senior faculty or staff position, area vocational school teachers).

Eleven statements in which fewer than half (50 percent) of the administrators from each of the four types of institutions agreed, which can be interpreted as disagreement, were the following: (see Table 10-2)

5. A mother's working can be easily accepted by a child.
7. Marriage is an asset for professional women.
9. For professional women children are an asset.
10. In this institution women are not as likely to achieve positions of leadership as men.
12. A woman's professional career should be subservient to her husband's.
14. Most women would like to be promoted to an administrative position.
15. A woman's first responsibility is to be a feminine companion of men and a mother.
19. Intellectual achievement of women is viewed as competitively agressive behavior.
21. Women in supervisory positions have difficulty dealing with males in subordinate positions.

TABLE 10-2

STATEMENTS IN WHICH LOW RATES (i.e., LESS THAN 50 PERCENT) OF AGREEMENT WERE FOUND

Item Identifier*		Statement	Faculty	Administrators
DRC	5.	A mother's working can be easily accepted by a chil	—	X
DRC	7.	Marriage is an asset for professional women.	X	X
DRC	9.	For professional women children are an asset.	X	X
CP	10.	In this institution women are not as likely to achieve positions of leadership as men.	—	X
CA	12.	A woman's professional career should be subservient to her husband's.	X	X
CA	14.	Most women would like to be promoted to an administrative position.	X	X
DRC	15.	A woman's first responsibility is to be a feminine companion of men and a mother.	X	X
DRC	19.	Intellectual achievement of women is viewed as competitively aggressive behavior	—	X
DRC	21.	Women in supervisory positions have difficulty dealing with males in subordinate positions.	X	X
DRC	23.	Career women play down feminine appearance in order to be taken seriously.	X	X
CA	24.	Most women would like to end their educational career as (full professors, high school teachers, senior faculty or staff positions, area vocational school teachers).	X	X

*DRC = Dual Role Conflict

CA = Career Aspirations

CP = Career Perceptions

23. Career women play down feminine appearance in order to be taken seriously.

24. Most women would like to end their educational career as (full professors, high school teachers, senior faculty or staff positions, area vocational school teachers).

From Table 10-2 it is seen that the administrators sided with the female faculty regarding eight of the items and three additional ones. The female faculty disagreed with items consisting of five in the dual role conflict category, three in the career aspirations category, and zero in the career perception category. For the administrators, this breakdown was seven in the dual role category, three in the career aspirations category; and one in the career perceptions area.

The Femininity Question

It appears that female vocational faculty place a high value on femininity because over 80 percent of them disagreed with the idea of playing down feminine appearance in order to be taken seriously. This same idea evoked the greatest amount of disagreement from the administrators as well. The strength of disagreement (as expressed in percent of total respondents who indicated disagreement) was about the same for all four types of institutions, although the faculty disagreement exceeded that of the administrators by 10 to 15 percent. Therefore it appears that everyone concerned agrees that professional women should not deemphasize their femininity in the interest of career advancement. (See Table 10-3)

Women in Supervisory Positions in Vocational Education

The item was "Women in supervisory positions have difficulty dealing with males in subordinate positions." With the exception of the high school groups (administrators and faculty), a greater percentage of administrators expressed disagreement than indicated by the female vocational faculty. (See Table 10-3)

The Question of Women's First Responsibility

The item in the instrument queried the sample about a woman's first responsibility as a feminine companion of men and a mother. Female faculty expressed strong disagreement with this statement, with the community college faculty being most adamant in their opposition to this statement (70 percent) while just barely half of the comprehensive high school faculty disagreed. The percentage of administrators who disagreed with this statement was consistently lower than the faculty members by 10 to 15 percent. (See Table 10-3)

Should Faculty Women be Subservient to Their Husbands?

Strong disagreement was found in this item. Less than one fourth of the faculty and administrator responses indicated that a woman's professional career should be subservient to her husband's. From these results, one can imply that male administrators agree with female faculty that there should be professional equality among the sexes. (See Table 10-3)

Conclusions

The analysis of the results continue and the desired outcomes expressed earlier in this paper are expected to become a reality. The comparisons to be made, by the time the study is completed, are displayed

TABLE 10-3

THE FOUR ITEMS COMMONLY DISAGREED TO MOST STRONGLY BY FACULTY AND ADMINISTRATORS

Item Identifier**	Item	School Type*	Faculty (%) A	Faculty (%) U	Faculty (%) D	Administrators (%) A	Administrators (%) U	Administrators (%) D
CA	A woman's professional career should be subservient to her husband's.	C.C.	18	14	68	12	15	72
		C.H.S.	27	16	57	25	16	59
		P.S.P.S.	22	20	58	22	24	54
		AVS	11	34	56	25	15	60
DRC	A woman's first responsibility is to be a feminine companion of men and a mother.	C.C.	17	13	70	20	22	58
		C.H.S.	32	18	51	40	21	39
		P.S.P.S.	24	17	59	40	16	44
		AVS	32	8	60	34	19	48
DRC	Women in supervisory positions have difficulty dealing with males in subordinate positions.	C.C.	19	25	56	18	17	65
		C.H.S.	22	30	48	26	24	50
		P.S.P.S.	20	22	58	36	14	49
		AVS	25	23	52	24	22	54
DRC	Career women play down feminine appearance in order to be taken seriously.	C.C.	7	9	83	6	20	74
		C.H.S.	7	4	88	12	16	73
		P.S.P.S.	7	13	80	14	16	70
		AVS	9	8	84	12	14	75

*C.C. - Community College
*C.H.S. - Comprehensive High School
*P.S.P.S - Post-Secondary Proprietary School
*AVS - Area Vocational School

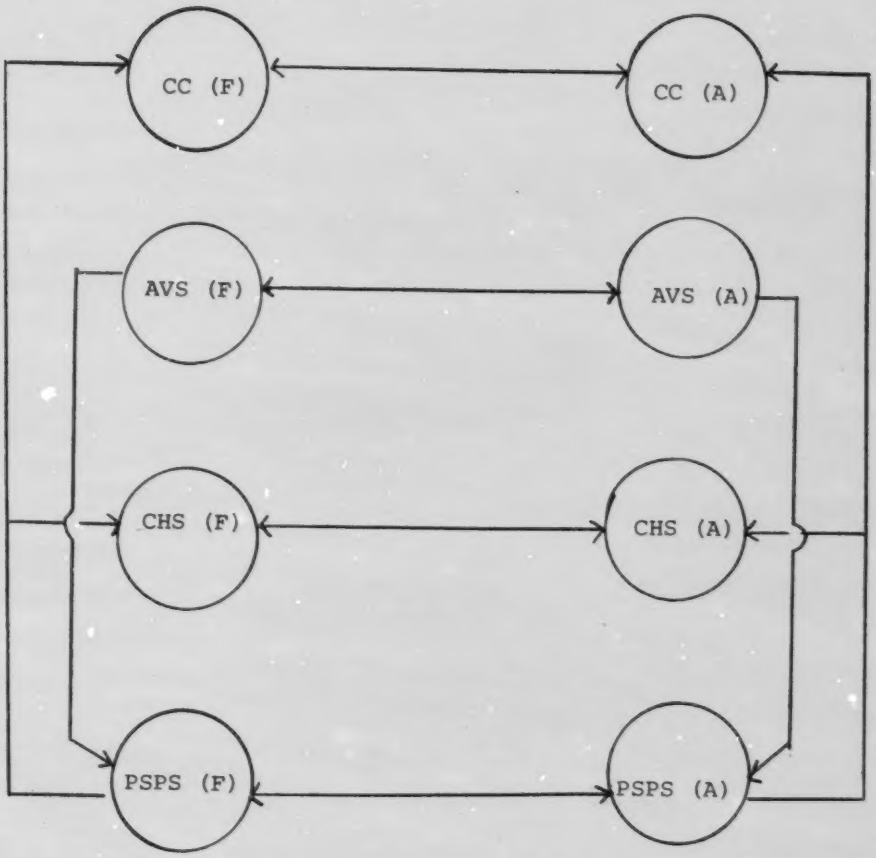
**DRC - Dual Role Conflict
**CA - Career Aspirations
**CP - Career Perceptions

in Figure 10-1. The areas of agreement between faculty women and their administrators in the four types of institutions will be identified. Also, of perhaps even greater value, the areas of disagreement between these constituencies will be found. Attempts to identify such relationships, as well as connections between responses and certain demographic data will be made.

The initial impetus for initiation of this two-year long national inquiry was a resolution made at the American Vocational Association Conference in Chicago back in 1972. This resolution read as follows:

> RESOLVED, that the American Vocational Association Board of Directors authorize a study of professional employment in Vocational Education with regard to the number of males and females at every level of the profession, the salaries paid to each category of employee, and identify any restrictions in promotional opportunities because of sex.

The final results of this study ought to have considerable implications for adult and continuing education. The dual role conflict apparently experienced by vocational women faculty is similar to that encountered by many female professionals. It would seem that certain elements within the dual role conflict dilemma could be laid out for more complete examination and analysis for female faculty in an attempt to resolve some of the issues involved. Efforts through inservice continuing and adult education could be a major vehicle in this direction. Carefully prepared arguments indicating the true sources of the dual role dilemma, and constructive approaches to dealing with it, could be an important focus of continuing and adult education for vocational female faculty.



THE ANALYSIS MODEL: VOCATIONAL FEMALE FACULTY STUDY

FIGURE 10-1

Note: Directional lines depict comparisons to be made in terms of:
a) each questionnaire item
b) each subtopic (i.e., dual role conflict, career aspirations, career perceptions)
c) selected demographic data

The career aspirations of female vocational faculty would likely change (in the positive direction) if and when they are able to better deal with the dual role conflict that obviously affects them in an adverse manner. At this point in time some female vocational faculty members would rather maintain a low aspiration profile in the interest of internal peace-of-mind and external job tranquility. Here again, adult and continuing efforts for vocational faculty (male and female) can bring some increased visability to the idea of women faculty entertaining the same career aspirations as their male counterparts.

In several places in this study, as indicated in the preceding review, women vocational faculty perceive their career advancement possibilities in a more modest manner than their male counterparts. This may be related to their realistic assessment of their professional situation in many cases. It may also be related to the dual role conflict phenomena for those who haven't resolved this difficulty to their satisfaction. Here again, I believe special efforts by adult and continuing education leaders can help to resolve some of the sex-based inequalities.

In conclusion, true equality of opportunity and all that goes with it, will be slow in coming in vocational education--maybe as long as the year 2000. But it won't happen by accident. Deliberate efforts on the part of certain groups, such as adult and continuing education leaders, are needed if we are to achieve such an equality by the year 2000.

11. PREPARING PEOPLE FOR OCCUPATIONS: STATE OF THE ART*

A Brief Look Backward

Vocational education enters the last quarter of the twentieth century as a remarkably humanistic endeavor in its attempts to prepare people for occupations, perhaps even more so than traditional classical and "liberal arts" forms of education. But this is a recent turn of events.

More than any other element in education, vocational education has benefited from federal financial intervention, and this has been going on for over a hundred years. When first supported by federal legislation in the 1860's, such assistance from the national level was viewed as a necessary addition to the nation's educational effort--a mechanism to prepare sons (and perhaps an occasional daughter) of the populous for occupations in the mechanical and practical arts. Although not explicity stated in the legislation, or in any of the associated rhetoric, implicitly understood was that this variety of education was aimed at providing opportunities for the offspring of the nouveau bourgeoisie and perhaps a few carefully selected sons of families from low class backgrounds. In its time, one could identify it as a part of the trend toward turning away from elitism and toward equalitarianism in American education. But the movement was undeniably sparked by a need perceived by certain educators and political leaders for trained workers who could not be brought into the work force through the then traditional routes of education, or apprenticeships. It was an attempt to meet the manpower

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*Extracted from classroom lectures, [illegible]

needs of society at that time, which were moving from being almost exclusively agricultural based to one of greater industrial orientation. Therefore, the movement was imbued with a mixture of equalitarianism and pragmatism. Within its inner core then, we find that the initial federal funding intervention in vocational education was primarily geared toward broad concerns of the work society. During this time, vocational education was basically devoid of humanistic characteristics in that the intention was to mold persons (via training) into behaviors needed to perform the occupational skills required by the labor force at that point in time. The belief that society, in the first place, was supposed to exist for people, and not the other way around, was not extant nor given serious consideration during this period of our nation's history (instead, every person was to find his [her] place in society and to sublimate their career aspirations in the interest of perceived needs of society).

Since education is a "service" oriented endeavor, it has been traditionally subservient to the dominate philosophical mood of contemporary society. More often than not, society views its institutions (including education) as major mechanisms for achievement of its perceived needs. It is important to recognize that this phenomenon has resulted in education traditionally assuming a follower-type role and rarely taking a leadership position relative to new directions in our society. Vocational education is similar in this regard to the other components in education. Leaders in education, those individuals who are first to perceive ongoing societal changes, are the ones that call upon a modification of responses from the educational delivery system of the nation. Because of the complexity and diversity of American society,

true trends are sometimes very difficult to distinguish from the many fads and panaceas, usually accompanied by their self-defeating jargonize, that seems to be plaguing American education.

Enter Career Education

Unfortunately, vocational education has not been spared. During the mid 60's and early 70's, vocational education was virtually overwhelmed with "career education." During this time, some vocational educators were quietly working toward development of a broad kind of vocational education exposed by the Vocational Education Act of 1963 and its successor, the Vocational Education Amendments of 1968. It was indeed a "career" oriented form of education, and was in progress long before the term was bantered about by certain national education authorities. Its exposal at the federal level, and the resultant publicity received by it before solid conceptualization of career education could take place, produced an outbreak of efforts throughout the nation to inaugurate career education programs, many of which were abortive. It is not too harsh to state that many, if not most, of these efforts were so ill conceived that failure was virtually assured at their onset. In many places, vocational funds were diverted into endeavors identified as "career education" programs but in fact were nothing more than slight modifications of what these institutions were previously doing but under other titles. The "game" was a variety of entrepreneurship where names of programs were changed to fit the latest jargon. While this was not true in some places, it most certainly was in many. In the meantime, the conceptualization of new modes for preparing persons for occupations quietly moved toward implementations that resulted in substantive improvements in vocational guidance and job preparation practices. As

the glitter associated with the term career education gradually began to fade, the real conceptualizers in vocational guidance and occupational education continued to work with a minimum of fanfare toward the design, development, and implementation of viable career education type curricula. Many of these programs will likely appear under other names however, since the term career education (like previous slogans) has lost its impact and much of its public attractiveness.

And Then, Competency-Based Vocational Education

Competency-based vocational education, both for students and teachers, gained some impetus in the early 1970's as career education began moving toward its nadir. This trend was in response to a number of perceived needs, most notably among them being a demand for increased accountability in education. Associated with the plateauing of spending for education in the 1970's was increased competition for funds, and competency-based education was viewed by some as a basis upon which funding decisions could be made. Its thrust in vocational education is indicative of the entire competency-based education movement.

Vocational education is deeply involved with competency-based education. As was the case with career education, considerable effort had been expended in a quiet manner by a number of reputable vocational educators before the slogan was drawn to the attention of the public at large. About 71 percent of 783 teacher education institutions had become involved with competency-based teacher education by 1973, (Massanari, 1973), and some 40 states had indicated some activity related to competency-based certification for vocational teachers by that same year.

An indication of the present status of competency-based education for preparing people for occupations is the position taken by the American Vocational Association when it went on record as encouraging various vocational services "to investigate the potential of competency testing to validate the occupational qualifications of vocational students and teachers (AVA, 1973). Advocates of competency-based vocational teaching believe its incorporation into the profession would be a major step toward increased professionalization of vocational teachers. Should such validation be possible, it indeed would be a boon to vocational education. But there are non-positive factors to be considered as well, most important of which is the impossibility of validation.

This is being included in vocational teacher education in some states and they are moving toward adopting some new certification mechanisms that, in the opinion of this writer, may end up being inferior to the ones being replaced. In those places where such mechanisms are introduced, preservice and inservice vocational teacher preparation may become politicized and deprofessionalized (a result opposite to original expectations).

A second factor that leads many to oppose competency-based teaching is that many researchers believe validation of teacher competencies is beyond the present state of the art (Barro, 1972).

A final factor which must be faced is that many (if not the majority) of teachers strongly dislike competency-based teaching and are fearful of how it will be used in evaluating their practices. This fact itself is sufficient reason to insist that we restrict efforts in this very difficult area of inquiry to carefully conducted research.

The occupational preparation aspects of vocational education are in the throes of competency-based education. Where this movement might end up, and its possible overall effect on vocational guidance and occupational education should be of considerable concern to the professionals in the field. A most important danger relative to competency-based vocational education is its distinct possibility for damaging the teaching profession. As stated earlier, teachers feel considerably threatened by this movement and are resisting its entry into their schools. The teaching profession is preventing its adoption on a large scale basis in many places already and there are moves afoot in some places to stop it entirely, while others are altering it such that the threat to teachers will be minimized. In short, the profession appears to be successfully resisting the full-fledged entry of competency-based efforts into vocational preparation at the present time.

The Dual Vocational Education System

The nation already has a dejure dual vocational education delivery system. One part of the dichotomy consists of a large conglomeration of vocational institutions (with considerable diversity within it), which include comprehensive high schools, area vocational schools, community-junior colleges, private junior colleges, technical institutes and post-secondary vocational institutes, proprietary schools, and senior colleges and universities. This represents a considerable effort with a total enrollment of almost 10.5 million students in 1971 and expenditures amounting to about 2.07 billion dollars (317 million from federal sources and the remaining 1.75 billion from state and local funds) (Lerner, 1973). The total of 10.5 million persons enrolled in this effort indicates the magnitude of the public vocational school involvement with

occupational preparation. Enrollment and expenditure figures for the proprietary schools are not available, but would almost certainly increase the total number of vocational students by at least an additional one or two million.

The other side of this duality is the delivery system previously provided by the Manpower and Development Act of 1962. The major vehicle is now the Comprehensive Employment and Training Act of 1973 (P. L. 93-203). Enrollments emanating from this effort totaled about 233 thousand in 1962, of which about 133 thousand found post-training employment. These figures do not indicate the duration of such employment, an important consideration since a large proportion of these enrollees were classified as disadvantaged and hard to train and employ.

The total enrollment for Department of Labor occupational preparation efforts rose to almost 1.6 million in 1972, with about 2.7 billion federal dollars committed to the effort during that year. It is clear that the federal government has invested heavily in this aspect of occupational preparation. Why are more federal funds spent in this effort than the total amount spent by state, local, and federal sources for the "other" vocational programs? While there is no direct answer, an implicit one is found when the enrollee characteristics are examined. The most obvious characteristics are the high proportion of non-Caucasian enrollees and the proponderance of persons whose educational level is below high school completion. The number of older enrollees (i.e., 45 and older) is disappointingly low however. These characteristics indicate the work and training programs sponsored by Department of Labor sources have been aimed at the disadvantaged and hard to employ sectors of the labor force. Since appropriations have continued to be

substantial for these efforts, via the Comprehensive Employment and Training Act of 1973 appropriations, it seems safe to assume that the Congress feels the high cost per enrollee is, in the long run, "worth the money."

One can expect these kinds of efforts to continue and they may likely expand as well. This apparently is a fait accompli: some of the hard-to-deal-with vocational students have been moved into special programs that fall outside the rubric of the traditional kinds of vocational institutions listed in the preceding paragraph. In actuality, it isn't a case of vocational schools "losing" some of their clientele--they never addressed themselves, either through vocational counseling or job preparation, to the kinds of people absorbed by the Department of Labor's work and training programs. But many public vocational school leaders view the trend with some alarm, perhaps because they fear this trend might be expanded in the future to include some of the more traditional kinds of vocational students. On the other hand, some observers of vocational education do not perceive this as a serious threat. But there is some reason to suspect that dissatisfaction with the way traditional vocational institutions have responded to non-traditional problems may have encouraged the passage of special legislation like MDTA of 1962 and CETA of 1973 in the first place. Perhaps greater attempts on the part of both elements in the dual system to more completely understand what the other is about will ease the tendencies toward mutual suspicion. The fact is, both elements of the duality are very much in evidence and remain an integral part of the occupational preparation delivery system; and now direct attempts to serve the vocational guidance and training needs of the population in the optimum manner (mutually in

some cases, separately in others) should take precedence over all other concerns. Vocational guidance services need to be used much more extensively by both, especially in the new Department of Labor sponsored efforts.

Varieties of Vocational Organizations

It is interesting to examine the kinds of organizations found in the vocational educational delivery system which is blessed with considerable diversity. These organizations can be categorized in a number of ways, the most common ones being by: (a) type of control; (b) level of instruction; (c) kind of institution. If one should so desire, other rationales can be used for categorization of these organizations with very little difficulty, but these appear to be the most common.

Identifying vocational organizations by type of control results in a trichotomy: (a) public; (b) private--non profit; (c) proprietary. The public element is by far the most important, both in terms of impact upon society and financial investment in its activities. The remaining two components within this trichotomy (i.e., private non-profit and proprietary) are experiencing funding and enrollment difficulties ranging in severity from impending bankruptcy on one hand to a year to year bare-bones kind of survival on the other. In spite of much rehtoric and some attempts to find ways to funnel public funds into these kinds of vocational organizations, not many public dollars (comparatively speaking) have gone to their treasuries and the financial condition of these schools was clearly worse in the mid 1970's than was the case in the previous decade.

The categorization of vocational organizations according to instructional level also results in a trichotomy: (1) secondary; (2) post-secondary; (3) adult and continuing education. During the decade from the mid 1960's to the mid 1970's, vocational program enrollment in each of these levels increased at faster rates than corresponding enrollments in other forms of education (i.e., general and academic). Post-secondary growth gained considerable impetus through the community-junior colleges and area vocational schools, since there was a sharp increase in the number of these institutions during the decade under examination. The relatively silent component in the trichotomy is adult and continuing education. Furthermore, it is not entirely appropriate to consider this as a level of education, as offerings within the rubric of adult and continuing education range in level from the basic to the most advanced. There is a very great need to provide reasonably easy career changing opportunities, with strong underg.rding by extensive vocational guidance services, for large segments of the work force every year from now on into the long term future. No serious concerted effort on a widespread basis has ever been made in this direction, and up to now, many persons have had to "bungle" their way out of one career into another without benefit of good vocational guidance services and other public or institutional assistance. The need for professional help in making career transitions is greater now than ten years ago and will reach almost crisis proportions in the next decade, and society can no longer afford to ignore this phenomenon. No one has taken a major initiative to date and it will be interesting to see if any of the public school organizations listed above will respond in some fashion to

this vital need. It appears most likely that legislation such as the Comprehensive Employment and Training Act of 1973 will provide such services for some of those in need of them.

A third way to categorize vocational organizations is by institutional type. The kinds of institutions can be broken down into the kinds previously listed. Using this approach permits convenient clustering of schools into such categories for the purpose of funding, student admissions, and regionalization. Identifying them in this manner also eases the task of establishing consortia and other coordination and cooperative mechanisms.

Source of Leaders in Vocational Guidance and Occupational Education

No large nationwide study of leadership endeavors has been made up to now, and a number of ambitious and carefully planned inquiries into this subject should be instituted soon. Some of the major questions begging for answers include: (1) Do the traditional requirements releating to certification affect the kind of leadership available in vocational education? Does it indeed keep out the "incompetent" only or does it also prevent certain desirable leader types from coming into vocational education at all? Furthermore, does it even succeed in excluding the incompetent? (2) How well are the vocational teacher-administrators training institutions preparing leaders? (3) What are the backgrounds of the most significant leaders in vocational guidance and occupational education? With regard to the third question, a biographic study of 50 recognized vocational leaders could provide a rich base of data and information from which vocational leadership can be more intensively studied and ultimately better understood. (4) What

about vocational guidance? How can its status in all areas of occupational preparation be elevated so that the need for such persons is more strongly felt in order that more of them would be utilized?

Many more questions can be posed but these are the central ones, and research based answers to them would enlighten the entire field of occupational preparation in this most critical matter of leadership. All too often, leadership positions are vested with persons who have learned to "tow the line," and to conform to the traditional constructs of vocational education. A proponderance of such individuals and the absence of maverick types in leadership positions will ensure high levels of traditionalism in the profession and bankrupt leadership (in terms of innovative ideas and approaches) will be extant.

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12. VOCATIONAL EDUCATION FOR THE 80's: SOME CONSIDERATIONS*

Introduction

Every social system has embodied within it a device akin (but not completely identical) to the biological negative feedback mechanism called homeostasis (Dubos, 1972). Adaptive responses (which can be considered analogous to negative feedback) become operative when a disturbance occurs within the system, which seek to restore the equilibrium of the biological system. At first glance, it would seem such an adjustive type response would be good. While this is true in the immediate sense, it also has certain long term disadvantages. One of the major dangers associated with homeostasis is the adjustments are addressed to the immediate impingement upon the system, while the long range effect of the homeostasis response itself may be less than beneficial. For example, the appearance of scar tissue, as an adjustment to the body's early repair to an organ injury, while an appropriate emergency response at the time the dangerous injury occurred, may impede the normal function of that organ later on. A phenomena similar to biological homeostasis occurs in vocational education. It is displayed in the manner in which the present delivery systems in vocational education function, where the traditional mode is to provide occupational preparation first and job placement second. While this approach was highly appropriate in the past, it is becoming increasingly dysfunctional in modern society. As it becomes more evident that jobs frequently change in nature and people change jobs more often than was the case just a few years ago,

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*Extracted from classroom lectures, Fall 1974.

vocational educators need to become more aware of the inappropriateness of the present delivery system--half or more of vocational graduates don't go into the occupational areas for which they were prepared. The adaptive response to this dilemma is of critical concern to American education. Will the homeostasis-like response be a "put out the bleeding" variety (i.e., quick short-sighted training) with resulting "scar tissue" (resulting in training for jobs that are not best for the individual or are unavailable) that will impede the vocational delivery system it meant to help in the first place? Or, will it be a new delivery mode, more rational and less homeostasis like? A logical adjustment would be a new delivery system (called the universal college) where (Gilli, 1975):

1. through careful guidance and counseling, and its various mechanisms of testing, interviewing, and consistent individual evaluation, each person would be advised into a curriculum of occupational clusters most appropriate for his constellation of talents and interests while simultaneously dealing with the realities of the labor market;
2. the student would spend as much time delving into the general and cognitive elements of that occupational cluster as he can profit from (judged jointly by himself, his teachers, and other appropriate professional support persons such as counselors);
3. upon reaching that point in his development, and with the direct assistance of professionally trained job coordinators, the student would be connected with an employer and a job congruent with his interests and abilities;

4. determination by the job coordinator and student and the new employer of those specific skills and tasks needed by the new worker on that job;
5. return of the student to a skill center type of environment where those skills deemed necessary for initial job entry would be mastered;
6. conscious provision for repeatability of any part or all of the cycle described above whenever needed by any worker.

The above strategy for preparing people for vocations is more than a homeostasis type of response in that accomodations are made for immediate dysfunctions while simultaneously providing an environment conducive for long term career development of each individual. It appears to be among the most constructive, adaptive responses vocational education can make to the ever changing parameters associated with job requirements and styles, and interests of people.

The big question is will it happen this way in the future? The prediction here is yes, but first on a more limited exemplary program basis. The approach is sufficiently iconoclastic to warrant careful testing before its wholesale adoption.

Along with a host of other difficulties, vocational educators run the danger of failing to provide the services needed by people in general while simultaneously failing to affect the decision making of the three generic power groups in the United States (i.e., the military, the politicians, and the industrial conglomerates). Vocational education may well find the world of education and vocational training passing it by while its leaders engage in a flurry of directionless skirmishes with others for funds and the where-with-all for provision of

vocational services. Such internal battles serve to inhibit creative approaches to modern vocational education problems, since only the old and conservative methods tend to be retained while the dissension continues. Are the traditional public vocational schools (secondary and post secondary) destined to become educational dinosaurs? If vocational education fails on both counts (i.e., in providing vocational services and also in affecting the decision makers within the three generic groups listed above), the present form of vocational education may indeed qualify itself for a place in the museum of educational relics and will become an array of memorabila of the way education "used to be in the old days."

Replacing "Fads" with Research Based Programs

Why must education always be subjected to fads? Vocational education is no exception. Witness the onslaught of career education and competency-based vocational education upon the profession. Does a profession turn to fads, rather than well designed, tested, and evaluated research endeavors, in search of its future directions because of a lack of original ideas of its own? Why is education so susceptible while other professions, such as medicine and law, are much more recalcitrant about incursions into their professional performances? It's hard to believe that the lack of new ideas is central to this susceptability. Does it have something to do with the overzealous attempts of some educators to capture the attention of society in general and the educational world in particular? The glibness with which such fads are taken on and later shedded bodes ill for the profession. A new idea is not necessarily a good one--it ought to be subjected to rigorous examination, analysis, field testing, and reanalysis to see whether it does in fact

offer a significant and positive contribution to the profession and its clientele. The prediction made here is that certain islands of innovation will develop in vocational education in the next decade. These will be associated with investigations and research based experiments of the most excellent design--most likely contractual consortia between universities having considerable research facilities and expertise at their disposal and several vocational institutions (such as community-junior colleges and area vocational schools). They will be the places in which certain fad-type ideas will be subjected to rigorous testing in order to accurately assess their usefulness to vocational students in particular and vocational education in general. Associated with them will be attempts to deal with the problem of diffusing newly found to be acceptable principles, practices, and ideas to the other (i.e., non-experimenting) institutions. It will call upon the organization of a special research-oriented field service effort, where the researchers would go out to the vocational schools and work with students, administrators, and faculties there on a long term basis for the purpose of impregnating the curriculum with worthwhile innovations. Substantial funding is required for such endeavors. Will it happen? Exemplary programs and other forms of experimentation in vocational education will likely be conducted on a limited basis. Sorely needed is vocational education legislation not unlike the Hatch Act for agriculture back in the late 19th century. Such legislation, if properly drafted and implemented, would provide for at least one vocational experimental center in most of the larger states. Although there is risk of some redundancy in such efforts, such a move would provide a mechanism for experimentation with a diversity of approaches to certain generic ideas

in vocational education. The prediction here is that several states, those fortunate enough to have a group of influential and farsighted vocational leaders in their regions, will succeed in pooling certain federal and state monies for conduct of such endeavors.

A problem viewed as a serious one by many, is the dilution of vocational funds by the incursion of peripheral activities, and this trend is likely to continue. Most notable will be inroads made by educators from the areas of guidance, industrial arts, career development, and vocationally related general education. It appears that each of the above groups will succeed in acquiring greater amounts of allocations from the overall vocational education fund, while the total amount of monies appropriated will remain essentially stabilized. The obvious net result, of course, will be a reduction of monies allocated to the vocational programs themselves. Is this a good or a bad trend? It probably will exert at least a restraining effect on traditional vocational program developments per se. On the other hand, some of these peripheral activities in the future, may serve as a catalyst, or even a vehicle, for the spread of the new type of vocational education already alluded to in the early paragraphs of this paper.

Funding

Vocational education has several other sets of major problems. One relates to federal funding and the direction it may take in the future (i.e., categorical funding, revenue sharing, or some blend of these two types); a second relates to state funding, which in most states is being used as a vehicle for increasing demands for cooperative-consortium vocational efforts in the interest of maximizing vocational opportunities

for its citizens while hopefully minimizing duplicative and redundant efforts. Another set of problems is related to funding at the local level, and is intricately tied in with real estate taxation, which is being increasingly viewed as a nonviable mechanism for obtaining funds for purposes such as education. A trend is afoot where local contributions will be stabilized or even reduced, while the states will increase their expenditures for vocational education to make up for reduced local monies. Added to the need for increased state funding is the likelihood that the federal share of the total appropriations for vocational education will stabilize or even gradually reduce. State support for vocational education will likely become the major type of support for vocational education in the future. This is evident from trends during the past ten years (see Lerner, 1973). Will it be an improvement over existing funding? In many states (i.e., those with strong and respected leadership in vocational education), the overall condition of vocational education will be improved by such efforts. In other states (i.e., those already suffering from vocational education leadership of mediocre quality), vocational education may not successfully compete for its share of the state dollars, and a reduction in the quantity and quality of vocational education may result. Looking at the nation as a whole, it appears that vocational education will not capture the imagination of the citizens any more than it has in the past. There will be some shuffling around--some states gaining while others are losing--with a net effect of little or no change. If a wider acceptance of vocational education is to come about, its mode of preparing people for occupations must change to one similar to that described in the early paragraphs of of this paper. However, it is difficult to see such a drastic revision

of the profession taking place without the introduction of a strong legislative mandate, which of itself would tend to usurp the entire vocational education movement, and would be considered undesirable by most traditional vocational educators.

Much of what happens in vocational education, unfortunately, may be analogous to the homeostasis phenomena, and attempts by vocational education leaders to adjust the delivery system to the external forces impinging upon it can result in a scar-ridden system with increasingly less flexibility as time goes on. The adjustment made in each case will alter the system just enough to find a new balance, and this will happen again and again. After a period of years, vocational education will become a hodge-podge, band-aid type system unless basic changes are made soon. This will continue until the system becomes (like the dinosaur) unable to sustain itself and then it will gradually give way to some other system for occupational preparation. Unfortunately, true and maximum changes are most likely to occur when there is no previous host of traditions to counter. The likely replacement for this increasingly antiquated system may be a new administrative form of vocational education by way of a funding vehicle such as the Comprehensive Employment and Training Act of 1973 (CETA). The most viable and innovative forms of vocational education, although relatively small in number and influence, can emerge out of the proposed state university type experimental center-vocational institution consortia discussed earlier. These can serve as models for more widespread adoption.

A change of style in funding already started is likely to continue well into the 80's. The resultant new funding approach (Comprehensive Employment and Training Act of 1973) is more flexible, in that many of

the constraints in traditional vocational education will have been shunted, but as the "new approach" becomes established, rigidities unique to it will emerge.

Special groups, those in need of other than traditional attention relative to vocational education, will continue to be the recipients of categorical aid (particularly the Vocational Education Amendments of 1968). Included will be funds for limited services to special ethnic groups, minorities, women, career changers needing income during their retraining period, and various other identifiable disadvantaged Americans. Such categorical funding may become increasingly loaded with an array of requirements in order to qualify for receipt of monies. The specificity of these regulations may increase if it is found that present categorical funds are not being wisely spent for their intended purposes. Should such specificity be carried too far, an outcome opposite to the intentions of the Congress and state legislators may occur, and this component of the federal effort to support certain aspects of vocational education may become dysfunctional.

Certain other federal funds, according to this prediction, will flow back to the states in the revenue sharing mode (presently through the Comprehensive Employment and Training Act of 1973). Criteria will be refined by which political units called prime sponsors (comprised of towns, cities, counties or some combination thereof serving populations in excess of 100,000) can singularly or together qualify for such funds. The unique element within this approach, and extremely threatening to many vocational education leaders throughout the nation, is that control of these funds will be vested with the political governing officials in the designated primary sponsor units. Furthermore, these leaders, in

conjunction with their governing and advisory boards will have the authority to establish new structures by which the funds can be allocated and dispersed. It is conceivable, (and even likely), that in some places, the governing officials may decide to bypass the existing public vocational school system, and contract for such services with one or more new educational configurations. While this alternative appears to be radical and even iconoclastic, it is quite likely to take the place of the entrenched ultra-traditional vocational systems presently found in some places.

It appears that the Congress is disenchanted with the Department of Health, Education, and Welfare regarding educational matters. This jaundiced view of HEW's capabilities is likely to continue, thereby providing additional impetus to the revenue sharing approach. Although a strong case for special exception to this approach has been made for vocational education by several of its national leaders in recent years, it is predicted these allocations (i.e., for vocational education) will also be largely in the form of revenue sharing. The idea of categorical funding for vocational education, with the exception of those for very special groups cited in an earlier paragraph, may well become an outmoded approach to vocational education financing. While the Department of Health, Education, and Welfare becomes less viewed as a conduit for vocational funds in the years ahead, the Department of Labor will become increasingly more successful in procuring such funds, which will strengthen the already existing dual system of vocational education described in a following paragraph. Therefore, it appears that federal funding for vocational education and training in the future will arrive via the two main conduits of (a) revenue sharing

legislation via the Department of Labor (presently the Comprehensive Employment and Training Act of 1973); and (b) the Department of Health, Education and Welfare source, (presently the Vocational Education Amendments of 1968), which may be reduced or even eliminated. The prediction bodes well for those who desire a new approach to vocational education, but is a harbinger of difficult times ahead for the traditionalists.

The Dual System

A bifurcation of the vocational services system which began in 1962 with passage of the Manpower Development and Training Act, has made a significant impact. There has been some debate over the ultimate effect of this movement to vocational education as a whole, and its clients. The predictions vary from those of the "doomsday" variety, to highly optimistic conjectures about monumental improvements in vocational education. It does appear certain that the phenomenon will indeed alter the delivery system of vocational education and its allied services.

The resultant distortion in the vocational delivery system can produce an overall improvement in the long run, especially for persons beyond the usual school attendance age (over 30), who are in need of special attention and benefits. The approach to supplying some financial subvention to adult students, a practice now in effect, (although in a vary inadequate form), via several of the programs included in the Comprehensive Employment and Training Act of 1973, may well be considered more seriously for mid-career changing adults. Substantial financial support for such persons will likely be inaugurated well before 1980. The rationale behind this variety of income subsidization

is akin to the principle of sabbaticals presently extant in the teaching profession. While this may be costly, estimates run as high as five percent of the Gross National Product each year, it seems reasonable to expect that the accrued benefits in terms of personal happiness and continued economic productivity of the recipients, is sufficient reason for the government to support a large scale investment of this nature.

The further expansion of vocational delivery efforts by Department of Labor funds can effectively contain the public vocational institutions to those activities in which they are now involved, and new endeavors will emanate from the other funding sources. It is predicted that most vocational education and training for adults will eventually fall within the rubric of the Department of Labor thrust, thereby crystalizing the dichotomy alluded to above.

Vocational Education Institutions

Several types of schools will likely maintain their present level and kind of involvement with vocational education into the 80's. Senior colleges and universities will probably continue as the major vehicle for the professional preparation of teachers and administrators, although the manner in which the task is performed may undergo change. Another important function of senior colleges, particularly state universities, will be an increased emphasis on the conduct of basic and applied research relating to vocational education. Although there has been considerable research of significance in vocational education up to now, the translation of findings into workable applications for the practitioner teacher and into mechanisms has been notably ignored.

The state-owned colleges in most places have been undergoing a transition from "teacher colleges" type institutions, to general purpose

and liberal arts oriented type schools since the fifties. The movement in which the state universities will increase their emphasis on graduate studies and research aspects of vocational education while reducing their undergraduate studies in this area, will further encourage the state-owned colleges to become more involved with undergraduate vocational teacher education.

Changes of major magnitude in the public community-junior colleges and area vocational schools are anticipated. Although a widespread trend toward incorporation of the universal college concept alluded to earlier is not expected for another decade or so, decisive movements in that direction, as well as sharing of faculty, facilities, courses, and programs are in the offing. A harbinger of this turn of events is the establishment of various coordinating boards for educational services in several states. Although the community-junior colleges and area vocational schools do have components within their respective institutional philosophies that are dissimilar, their differences are more often complimentary than contradictory. Because of this, these two types of institutions may be formed into organizational amalgams that can become viable mechanisms for the provision of a rich constellation of vocational programs and associated services for adolescents and young adults. Once such amalgams are commonplace, and it is expected that they will be by 1980, the adoption of the universal college idea will then become a relatively natural transition.

The comprehensive high schools, in many places, are presently falling short of meeting the vocational needs of a majority of their students. One cannot help but suspect that many local school authorities and decision makers agree with this statement, as indicated by the

rapid growth of the area vocational schools, whose avowed purpose is to provide vocational education. In view of this development, such secondary schools will become increasingly concerned with the academic, nonvocational type subjects, and the public will come to rely increasingly more on area vocational schools for provision of vocational programs and kindred services. In other words, there will be a continuation of the trend to separate vocational education out of the general purpose type secondary schools and into their own institutions. The philosophic debate relative to separatism in education will reach a new crescendo, although the overall tune will be the same. During this time, some well designed research into the merits and dangers of separatism between vocational and academic education will be conducted. Hopefully, the findings of these research endeavors will contribute to knowledge about where vocational students would be better off. There is some basis now to suspect that vocational students enjoy greater satisfaction and happiness when they are partialed out of the total educational system into a special sub-system purposely oriented to serving vocational students (Gilli, 1974).

The most profound institutional changes predicted in the next decade will probably occur in the private school sector. Both secondary and post-secondary private schools will be reduced in numbers to the point where their impact upon vocational education will become negligibly small. In spite of the rhetoric about private and proprietary school vocational education and their training possibilities, most of these institutions are not and will not become financially viable. Even those operated by the large learning corporations, with large sources of money behind them, will abandon most, if not all, of their efforts in

the field of vocational education as the possibility of making these endeavors profitable dwindles. Continued and consistent injection of public funds into vocational education will prohibit the proprietary schools from ever effectively competing with the public sector, resulting in most of them disappearing from the educational scene in the next decade.

People to be Served

Theoretically, the majority of Americans should have direct contact with vocational education and related services at least several times during their lives. If public vocational education were universalized, which is visualized as an idealized form of vocational education by some, then virtually everyone would encounter some facet of vocational education as early as their secondary school years. At the present time, the proponents of this position see vocational education as a panacea for several of the ailments that seem to be creating difficulties for secondary schools. Most pronounced among these, is the frequently heard statement that American high schools fail to bring adolescents to terms with social and occupational realities. Those who advocate universalization of vocational education, and some other educators as well, urge that studies of the nature of occupations be made an integral part of the school curriculum in the same manner that social studies, American and state histories, and English have become. Should this find acceptance in the American high school, then vocational education would indeed, become truly impregnated into the rubric of the nation's educational system.

While the concept of career development will likely gain increased acceptance in both elementary and high schools, the chances of moving it

from the guidance-counseling stage into actual courses and programs dealing with skill development and training on a universal basis, will encounter resistance. Why is this so? There are a multitude of factors contributing to the general reluctance to universalize vocational education in the secondary schools. The public at large has yet to embrace the belief that within the rubric of vocational education, are studies that are useful for most persons. Many parents continue, in spite of the enlightened philosophy of present day vocational education, to hesitate earmarking even a small portion of their children's secondary school coursework for vocational education elements unless, or until, it is abundantly clear to them that their offspring is not likely to succeed in finding entry into one of the professions. Stating this phenomenon in a more direct manner, most parents (and therefore their youngsters) continue to perceive vocational education as the "other alternative" when they have "given up" on breaking into the ranks of a profession.

In view of this fact, it is likely that in the future, secondary school age persons receiving vocational education will be those with demographic and intellective characteristics quite similar to today's secondary school vocational students (i.e., those who are less likely to enter one of the professions). And, since a general leveling in the number of high school age persons is expected eventually (because of the effects of a downturn in the national birthrate), very little change in the number of youngsters receiving vocational education is projected.

Several other factors relative to this matter are also at work. First, there is a perceptible increase in the number of post-secondary school youngsters enrolling in vocational offerings. The most important

public institutions engendering this trend are the community-junior colleges and area vocational schools. But, the growth in enrollment in these two institutions is also likely to stabilize soon. Therefore, this segment of vocational education will not have a long-term growth effect on vocational education enrollments. Another is the increasingly greater role played by the Department of Labor. A major change in vocational enrollments will be those having to do with mid-career training and occupational adjustments. Much of this effort will be conducted under the auspices of the Department of Labor funding (such as the Comprehensive Employment and Training Act of 1973) and not through the now extant public school system. If the history of previous vocational training via the Department of Labor is a harbinger in this regard, then little involvement of the public vocational schools in these endeavors can be expected. But history repeats itself only when no direct attempts are made to alter its course. Should other sources of vocational funding fail to expand or even maintain their present levels (such as the Vocational Education Amendments of 1968 or its successor), a number of the more entrepreneur-oriented public schools may aggressively seek Department of Labor funding. It will be interesting to observe what longitudinal effect such external funding (i.e., outside the traditional state department of education conduit) will have upon these schools.

The dual delivery system in vocational education will reflect itself most obviously in the manner people are served. The public vocational schools will continue to address themselves to traditional secondary and post-secondary youth who are "cooled" out of the academic pre-professional programs. Some of the non-academic oriented youngsters

with social or socio-economic difficulties will receive special vocational education and training assistance via Department of Labor funded programs. The emerging and most critical phenomenon of changing careers by the middle aged, which needs to be accompanied by substantial subsistence payments for persons while they are in this transitory stage, will likely fall within the rubric of Department of Labor concerns. Those less dramatic occupational adjustments (updating and upgrading of skills), although they may not completely interrupt the employment of these individuals, will also likely fall within the responsibilities of the Department of Labor. The younger, pre-employment persons will obtain their vocational education and training through the traditional school system (secondary schools, area vocational schools, and community-junior colleges) while others in need of vocational education and training will be served by the Department of Labor funded programs.

Conclusions

Vocational education stands a chance of achieving greater acceptance into the American education system, as it adopts a new approach alluded to in this paper. It is now more realistic to connect people with jobs before provisions of specific training, because of frequent changes within existing jobs and the continuous emergence and disappearance of other jobs. The basic responsibility of secondary and post-secondary vocational educators, in cooperation with other important elements in the education system, (particularly vocational guidance counselors), is to provide students with an introduction to groups of occupations so as to facilitate career decision making. Only after a mutual agreement has been reached by employer and employee, will specific

training be offered, at which time it can be directed precisely toward requirements of the job on hand. Guesswork is thereby reduced to a more acceptable level.

The adult portion of the vocational education and training thrust will become the major concern of the other part of the dual delivery system--those programs and activities sponsored by Department of Labor funds. This may indeed become the major element in vocational education in terms of number of clients and amount of funding, because of an anticipated increase in the tempo of career-changing and occupational adjustments by middle-aged workers. The new vocational education will touch perhaps upwards of three-fourths of our population by the end of the 80's.

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